Maths Problem Solving

1. Read the problem carefully. The first and most important step is to read the problem carefully to understand what you're asked to find out and what information you have been given. Underlining the important information is also useful so you have all the important numbers/facts to hand.

2. Choose a strategy and make a plan.

3. Carry out the plan and solve the problem.

4. Check the working out and make sure that your solution is actually answering the question.

There are a number of strategies that can be used to solve maths problems, as follows:

Helping your child with maths

It's important to remember that maths is all around us. We come across problems that need to be solved using time and money in our lives all the time. We're managing risk and solving problems all day long, as well as estimating and measuring. So the short answer is "by involving them in day to day discussions which involve maths. The longer answer is as follows..

Around the home

There are lots of opportunities around the home to talk about maths. Here are some ideas:

- Talk about numbers in sport. How many points does your team need to avoid relegation? How many goals/tries/conversions/points/runs has your team scored this season?
- When cooking, measure ingredients and set the timer together. Talk about fractions in cooking, for example ask them how many quarter cups make a cup.
- Discuss proportions when you make a cup of tea or squash as them how much milk or how much water they're using.
- Talk about the shape and size of objects. Use the internet to find interesting facts like tallest and shortest people, or biggest and smallest buildings etc.
- Talk about time. For example get them to work out what time you need to leave the house to get to school on time.
- Look for maths on TV, newspapers, magazines and talk about it together.
- Use newspapers. Talk to your child about percentages in special offers, the probability in the weather reports, the length of TV shows and compare the salaries in the jobs section.

- Solve maths problems at home. For example 'we have 3 pizzas cut into quarters, if we eat 10 quarters, how many will be left?'
- Talk about shape, size and quantity. Use the internet to find interesting size facts like most and least populated cities, highest mountains or deepest valleys etc.

Maths and Money

Money is linked really closely to maths and developing financial literacy is really important with young children. What about:

- If your child has a mobile phone, use it to talk about maths and money saving. Look together for the best plans; Does their network sell any extras that would make texts or calls cheaper? Is it cheaper to text or use Skype, Snapchat or WhatsApp?
- At the shops. When buying a couple of items, ask them to work out how much they will cost together. As a challenge for older children, ask them to estimate what the weekly shop will come to.
- Use pocket money as an opportunity to talk about maths – are they saving for anything? How much do they need to save each week to buy it?
- Work out offers in supermarkets together. Ask them to work out which are the best deals.
- When travelling, ask your child to help you work out whether it's cheaper to drive or take public transport. Are there any deals you can get on public transport?
- Talk to them about getting a bank account. Look together at what's on offer for young people opening their first account and see which is the best deal.
- Ask your child to check your change.

Games

Games are a great way to both engage children and get them to use their mathematical skills. Some ideas for maths use at home with games include:

- Play with cards. Take 2 cards and add the numbers together, the player with the highest number wins. Try it with subtraction, multiplication, and division too.
- Get them to design a tree house, clothes or car or whatever they're interested in. Ask them to work out the right measurements.
- Play board games like Connect 4, Jenga, Monopoly, Scrabble or Dominos.
- Ask your child to design their own board game and dice. Play the game together and talk about the mathematical thinking, reasoning, or problem solving the game used.

Out and About

Whether attending sporting events, walking around the local area or in the car, opportunities abound for teaching maths:

- When travelling somewhere familiar, ask your child to give you directions and timings, then test their directions out. If they get something wrong, ask them to think of the best way to get back to where you want to go.

- Look for patterns and symmetry when out and about.
- Sports are the perfect chance to think about speed, scores, time and angles. Get competitive; try out different angles to score from, ask them how many star jumps can they do in a minute.
- Explore the local area. Ask them to guess how many people live in your town, how far is the nearest airport is etc. Ask for the reasons behind their answer and check the answers online.
- Estimation. For example ask them to think about how they can estimate how many bricks were used to build a local landmark.
- Hobbies. Ask them to talk about the maths they have come across in the favourite hobby.
- Journeys. Ask them questions like how many miles or kilometres have we travelled, how many are left and what time should we get to our destination.

Books, movies and TV

Whatever your child is reading or watching, there are opportunities to talk about maths. For example:

- How did the 'clock' work in the Hunger Games: Catching Fire by Suzanne Collins?
- How long does it take Alex Rider to solve his missions in the series by Anthony Horowitz?
- How many votes are being cast on X Factor or Strictly Come Dancing?

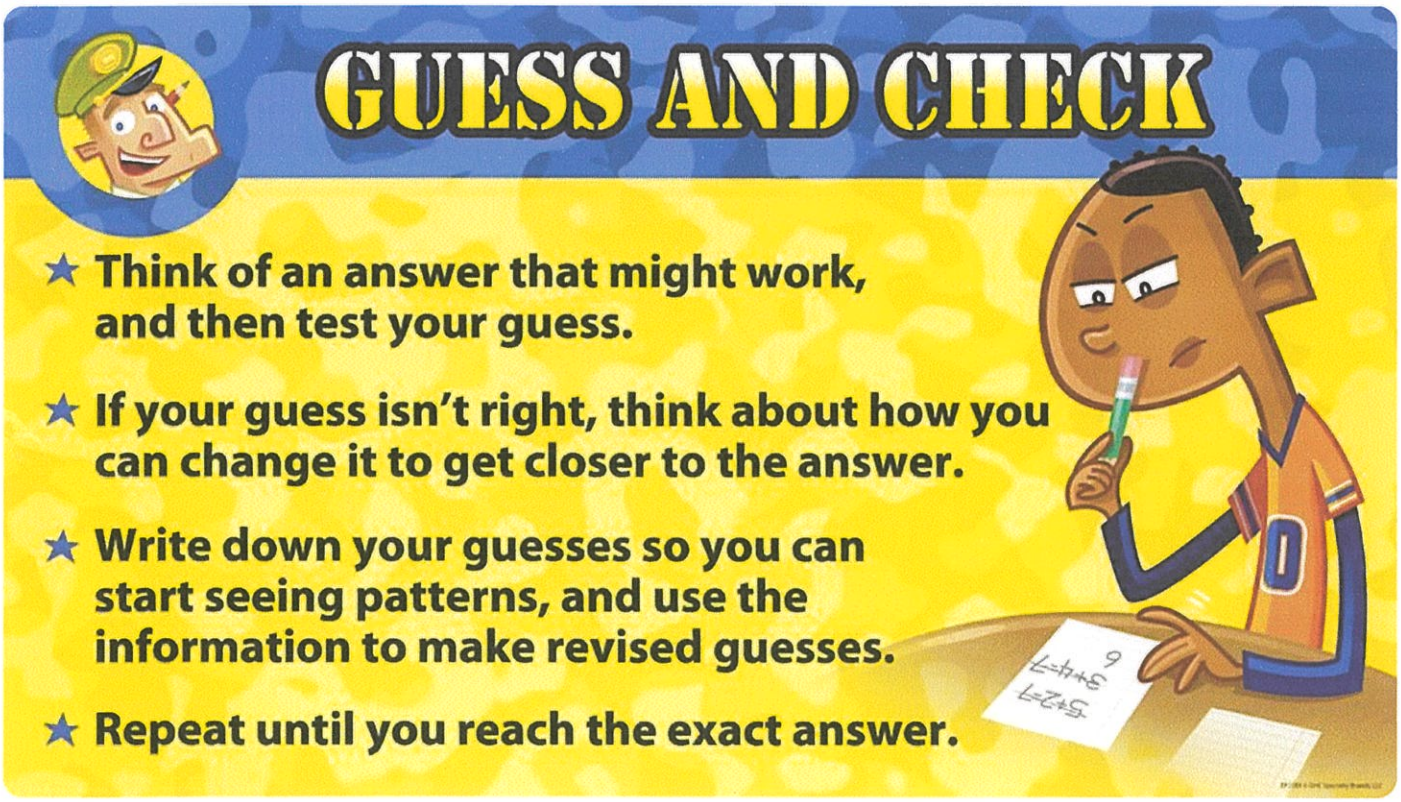
By discussing the maths found in books, TV and film, children see how maths is used all the time.

As you can see, there are loads of ways that parents can help their children with maths. And the great news is that these are all free, so no need to go down to your local bookstore and buy a book about maths. Make them aware that maths is all around them and there maths will develop with this.

Note: ch = Questions presenting a bit more of a challenge.

Creating a diagram can help mathematicians to picture the problem and find the solution. To create a diagram, the problem must be read carefully and the information that has been given to them in the question drawn into the diagram. They can then work out the solution from the diagram that has been drawn.

Guess and check



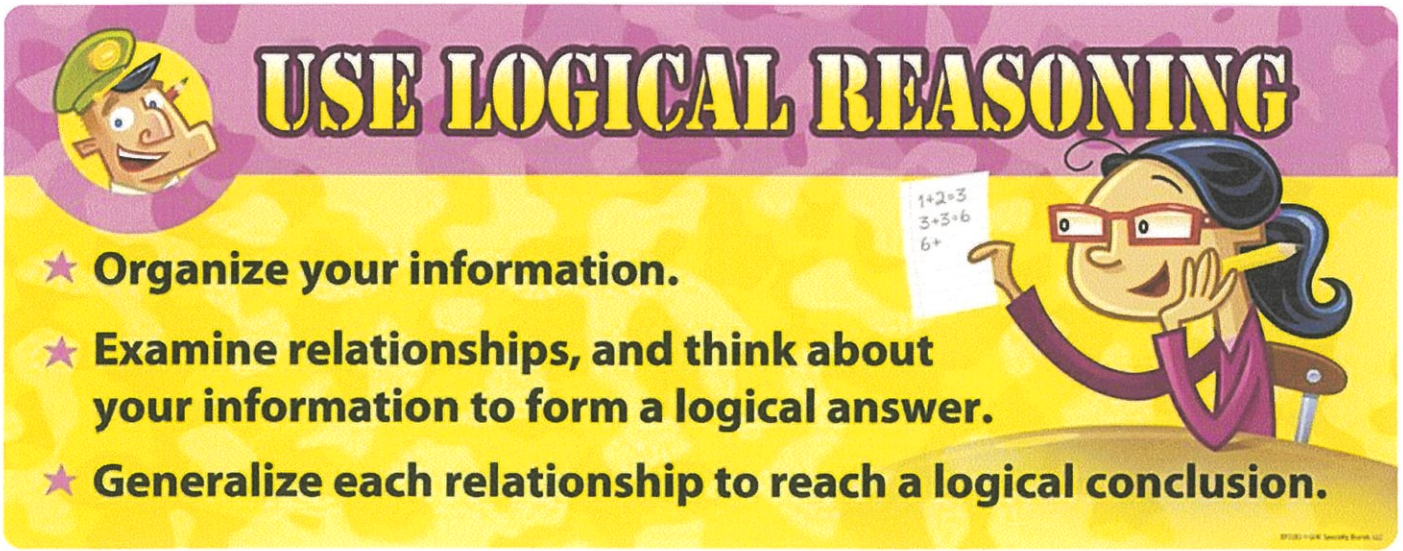
The guess and check strategy can be helpful for many types of problems. When students use this strategy, they will make a reasonable guess, based on the information that they have been given and then check to see if their guess is correct The guesses should get closer and closer to the answer, until the correct answer is found.

Use a table or make a list

Using a table is a good way to sort out and organise the information that has been given in the question. The information that has been set out in the table will hopefully lead students to the correct solution.

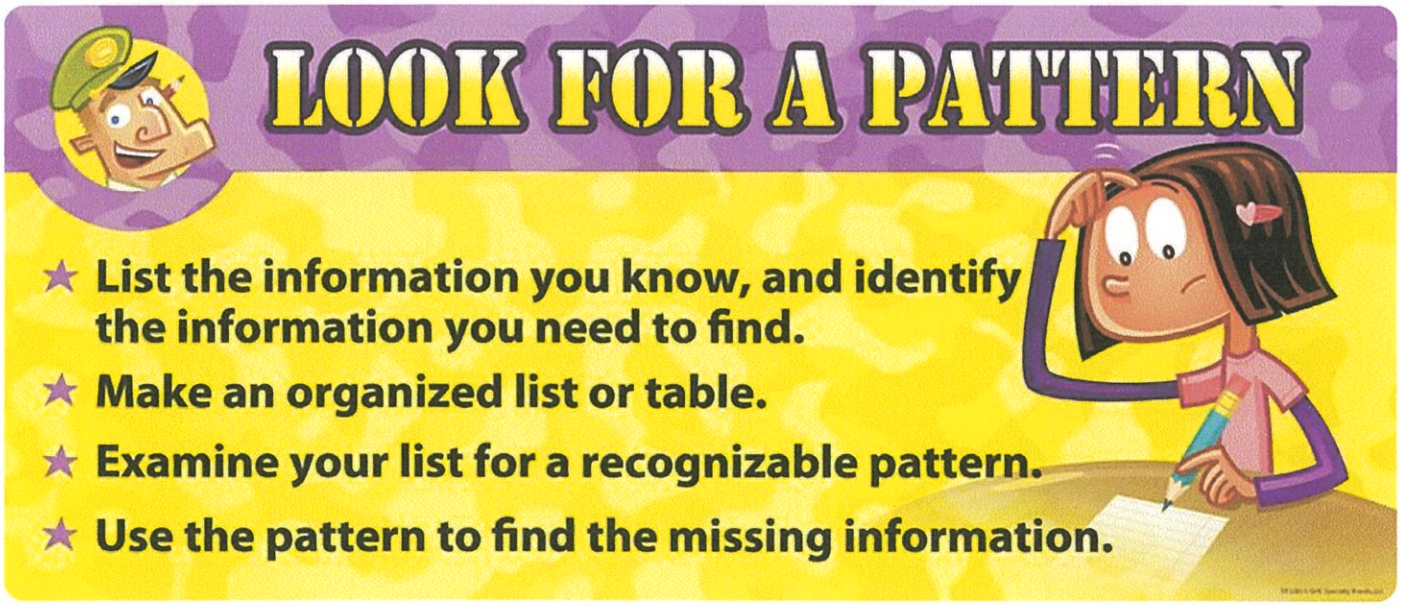
Making a list is a strategy that will help students sort out the information that has been given in the problem. Once the students can see all of the possibilities for the solution, they can then attempt to solve the problem more easily.

Logical reasoning



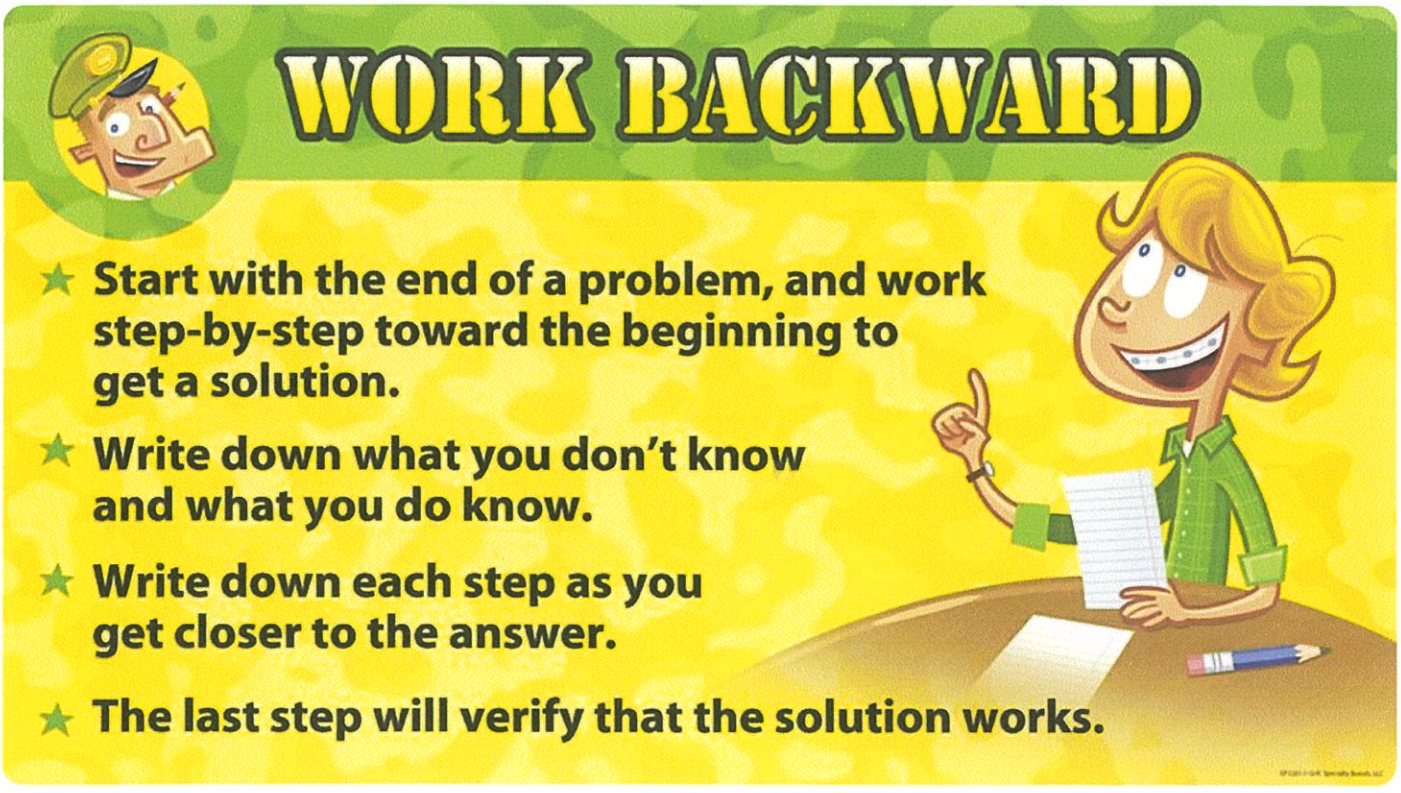
This strategy requires students to use the information they have been given in the question to eliminate possible solutions to finally discover the correct solution.

Find a pattern



When students use this strategy they look for a pattern from the information that has been given. Once the pattern has been identified, the students can predict what will happen next and then continue the pattern to find the correct solution.

Working backwards



Working backwards is an excellent strategy to use when the final outcome of the problem has already been given. Students just need to work out what the events were that occurred previously.

Solve an easier version

Sometimes the problem is too difficult to solve in one step. When this happens the students will be able to make the problem more simple by dividing it into smaller and easiest steps, such as rewording the problem using smaller numbers.

Topic : Time Word Problems-

1. Kelly started eating his breakfast at 9:15 a.m. He finished his breakfast at 9:45. How long did it take him eat his breakfast?

2. Reran left school at 12:15 p.m. He walked home and got there at 1:00 p.m. How long did it take him to walk home?

3. Tom brought his album for show. He started showing his album at 3:30 p.m. and finished at 4:20 p.m. How long did he show the album?

4. Jerry's family just got a new television. Jerry watched the television from 8:40 p.m. to 10:40 p.m. How long was Jerry watching the television?

5. Merry went to the store to buy a pack of gum. She left her house at 2:30 p.m. and got back home at 3:40 p.m. How long did it take her to walk home?

6. Dynic had a piano recital after school. The recital started at 5:00 p.m. and lasted until 6:30. How long was the recital?

7. Ricky's friends came over at 5:30 p.m. They stayed until 7:00 p.m. How long were Ricky's friends at his house?

8. Bowie started painting at 9:40 a.m. and painted until 11:00. How long did he paint?

9. Shanty was looking at the stars from 10:45 p.m. to 11:20. How long was she stargazing?

10. Jack took a shower at 10:00 a.m. He got out of the shower at 10:15 a.m. How long was he in the shower?

A day out

1. Jim's alarm goes off at 8 o'clock. Two hours later he leaves the house. What time does he leave?

_____

2. Jim and Becky leave their home at 10 o'clock. They arrive at the park at 10:30am. How long did it take to walk to the park?

_____

3. They find that the ice-cream shop does not open until 11.30am. How long do they have to wait until it is open?

_____

4. At 12.30pm they play football for 10 minutes, and then have a break for 10 minutes. What time is it then?

_____

5. At 2pm, Jim says "I'm going for an hour's bike-ride around the park". He arrives back at 3.20pm. How many minutes late is he?

_____

6. They were out from 10am until 4pm. How many hours were they out altogether?

Problems

Work out the answer to the problems. Show your working out.

1. Billy has 11 sweets. He eats 8. How many does he have left?

_____

2. Tom has 15 Pokémon cards. His mam gives him 6 more. How many does he have now?

_____

3. Sarah has 9 smarties, but Kate has 18. How many more smarties does Kate have?

_____

4. A donut costs 25p. How much change do you get from 30p?

_____

5. Class 3 have 12 cartons of milk and class 4 have 14. How many do they have altogether?

_____

6. Class 1 eat 26 pieces of toast and class 2 eat 20 pieces of toast. How many do they eat altogether?

_____

7. 30 apples fall from a tree. 10 were bad and 3 were eaten by birds. How many were left to eat?

_____

_____

8. Julie bought a toy at 10p and a chocolate bar at 25p. How much change did she get from 50p?

_____

_____

9. Bob had 8 lego bricks, and then he was given 9 more, but his little brother lost three of them. How many bricks did Bob now have?

_____

_____

10. Tracy had 26 biscuits. She gave 10 to her sister and three were broken in the packet. How many whole ones did she have left?

_____

_____

Topic : Time Word Problems-

Solve the following:

1. Rex started eating his breakfast at 8:20 a.m. He finished his breakfast at 8:50 How long did it take him eat his breakfast?

2. John left school at 12:30 p.m. He walked home and got there at 1:15 p.m. How long did it take him to walk home?

3. Adam brought his album for show. He started showing his album at 4:50 p.m. and finished at 5:20 p.m. How long did he show the album?

4. Paul's family just got a new television. Paul watched the television from 10:00 p.m. to 11:15 p.m. How long was Paul watching the television?

5. Mac went to the store to buy a pack of gum. He left his house at 1:45 p.m. and got back home at 2:15 p.m. How long did it take him to walk home?

6. Jonny had a piano recital after school. The recital started at 4:00 p.m. and lasted until 5:45. How long was the recital?

7. Pitter's friends came over at 6:15 p.m. They stayed until 7:20 p.m. How long were Pitter's friends at her house?

8. Monty started painting at 11:40 a.m. and painted until 1:00. How long did he paint?

9. Shelly was looking at the stars from 11:30 p.m. to 12:10. How long was she stargazing?

10. Mark took a shower at 9:00 a.m. He got out of the shower at 9:20 a.m. How long was he in the shower?

Topic : Time Word Problems-

Solve the following:

1. Harry started eating his breakfast at 8:05 a.m. He finished his breakfast at 8:37.How long did it take him to eat his breakfast?

2. Rocky left school at 2:10 p.m. He walked home and got there at 2:55 p.m. How long did it take him to walk home?

3. Hilly brought his album for show. He started showing his album at 2:50 p.m. and finished at 3:27 p.m. How long did he show the album?

4. Louis's family just got a new television. Louis watched the television from 10:25 p.m. to 11:05 p.m. How long was Louis watching the television?

5. Cherry went to the store to buy a pack of gum. She left his house at 12:10 p.m. and got back home at 1:00 p.m. How long did it take her to walk home?

6. Robin had a piano recital after school. The recital started at 4:33 p.m. and lasted until 5:05. How long was the recital?

7. Sonia's friends came over at 5:05 p.m. They stayed until 6:33 p.m. How long were Sonia's friends at her house?

8. Davis started painting at 10:23 a.m. and painted until 12:00. How long did he paint?

9. Justin was looking at the stars from 10:00 p.m. to 11:25. How long was he stargazing?

10. Joy took a shower at 10:33 a.m. She got out of the shower at 10:48 a.m. How long was she in the shower?

Topic : Time Word Problems-

Solve the following:

1. Potter started eating his breakfast at 8:15 a.m. He finished his breakfast at 8:40 How long did it take him to eat his breakfast?

2. Addie left school at 11:00 p.m. He walked home and got there at 11:45 p.m. How long did it take him to walk home?

3. Markel brought his album for show. He started showing his album at 12:10 p.m. and finished at 1:00 p.m. How long did he show the album?

4. Bobby's family just got a new television. Bobby watched the television from 9:30 p.m. to 10:15 p.m. How long was Bobby watching the television?

5. Mickey went to the store to buy a pack of gum. He left his house at 11:05 a.m. and got back home at 11:50 a.m. How long did it take him to walk home?

6. Rogan had a piano recital after school. The recital started at 3:20 p.m. and lasted until 4:20. How long was the recital?

7. Toni's friends came over at 5:30 p.m. They stayed until 6:15 p.m. How long were Toni's friends at her house?

8. Prince started painting at 11:00 a.m. and painted until 12:00. How long did he paint?

9. Romeo was looking at the stars from 10:30 p.m. to 11:45. How long was she stargazing?

10. Mike took a shower at 9:10 a.m. He got out of the shower at 9:30 a.m. How long was he in the shower?

Topic : Time Word Problems-

Solve the following:

1. Jackson started eating his breakfast at 9:30 a.m. He finished his breakfast at 10:05. How long did it take him to eat his breakfast?

2. Jimmy left school at 1:00 p.m. He walked home and got there at 1:30 p.m. How long did it take him to walk home?

3. Hendrix brought his album for show. He started showing his album at 1:15 p.m. and finished at 1:55 p.m. How long did he show the album?

4. Rom's family just got a new television. Rom watched the television from 10:05 p.m. to 11:10 p.m. How long was Rom watching the television?

5. Shan went to the store to buy a pack of gum. He left his house at 10:20 a.m. and got back home at 10:45 a.m. How long did it take him to walk home?

6. Goldie had a piano recital after school. The recital started at 2:15 p.m. and lasted until 2:55. How long was the recital?

7. Lack's friends came over at 6:00 p.m. They stayed until 7:15 p.m. How long were Lack's friends at her house?

8. Arad started painting at 12:20 p.m. and painted until 1:00. How long did he paint?

9. Molly was looking at the stars from 9:30 p.m. to 10:15. How long was she stargazing?

10. Shimmy took a shower at 11:10 a.m. He got out of the shower at 11:35 a.m. How long was he in the shower?

Time word problems

Word Problems Worksheets

Read and answer each question.
Remember to include "am" or "pm" in your answers when appropriate:

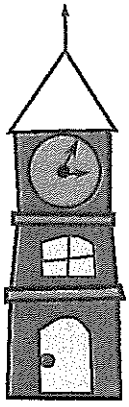
1. The train was scheduled to arrive at 5:10 p.m. However, it was delayed for 25 minutes. What time was it when the train arrived?

2. The bus departs the bus terminal every 2 hours. If the first bus is scheduled to depart at 10:35 a.m., when should the second bus depart?

3. The train left the terminal at 11:20 a.m. and arrived at its destination at 2:40 p.m. How long did the train travel?

4. Passengers usually start to board their flights 1 hour before the scheduled take off time. The gate will be closed 15 minutes before the takeoff time. Jack's plane is scheduled to take off at 12:05 a.m. If he arrives at the gate at 11:45 p.m., can he board the flight?

5. A bus is scheduled to leave the terminal at 9:45 p.m. and travels for 5 hours and 45 minutes to another city. However, the bus left the terminal 25 minutes later than the scheduled time. When will the bus arrive at the other city?



Time word problems

Word Problems Worksheets

Read and answer each question:
Remember to include "am" or "pm" in your answers when appropriate:

The school opens at 8:35 a.m. Classes start at 9:15 a.m. The two breaks are at 11:00 a.m. and 1:45 p.m. School ends at 3:15 p.m.

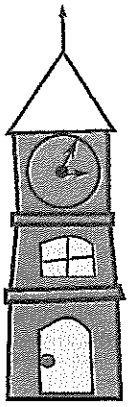
1. Sam arrives at school at 8:20 a.m. today. How much time does he need to wait before the school opens?

2. The first bell will ring 20 minutes before the class starts. When will the first bell ring?

3. How much time is there between the two breaks?

4. The second break is 50 minutes long. When does the second break end?

5. The school provides after-school care for a maximum of 150 minutes after school ends. When is the latest time for pick up?



Read and answer each question:

At a fire station, there are 9 fire engines and 5 ambulances.

1. 3 paramedics are needed whenever an ambulance is dispatched. What is the number of paramedics that are required to be on duty at any time?

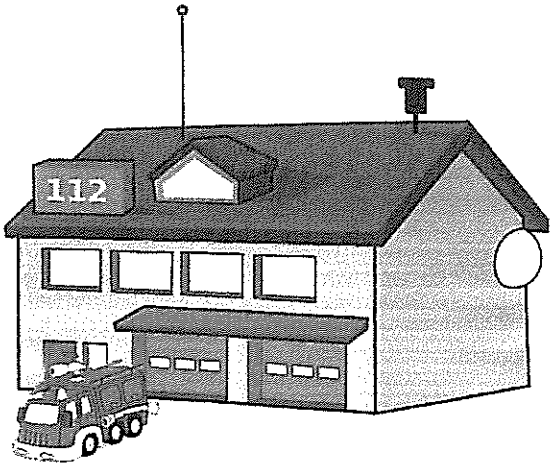
2. If there are 3 different shifts for paramedics, how many paramedics are there in total?

3. There are 54 firefighters on duty for each 12-hour shift. How many firefighters can be assigned equally to each fire engine?

4. How many firefighters will be working at the fire station everyday?

5. For each car accident, the fire station will dispatch 12 firefighters, 2 fire engines and 1 ambulance. If there are 4 car accidents, how many firefighters will be dispatched?

6. Write an equation using "x" and then solve the equation.
Every 3 months, each firefighter is required to undergo 15 hours of training. Each firefighter should finish x hours of training every year.



Mixed add / subtract / multiply / divide

Word Problems Worksheet

Read and answer each question.

Dave is working to improve the yard at his house.

1. There are two kinds of soil to choose from. If brand A is $50 for 5 kg and brand B is $48 per 4 kg, which brand is cheaper?

2. There are two pine trees at the front entrance. The tall one is 16 feet and the short one is 7 feet shorter than the tall one. Dave has a ladder that is 14 feet tall. Compared to the shorter pine tree, how much taller is his ladder?

3. Each pack of pumpkin seeds costs $8 and each pack of tomatoes seeds costs $5. What is the total cost for 3 packs of tomato seeds and 4 packs of pumpkin seeds?

4. He planted 5 flower beds with roses and tulips. If there are 5 roses and 9 tulips in each flower bed, how many more tulips are there?

5. Dave spent 2 hours working in the yard everyday. If he worked for 24 hours in total, how many days did he work in the yard?

6. Write the number sentence that fits this: "Dave spent $24 to buy new tools, $13 to buy seeds and $30 for a new garden hose. He spent a total of $67 at the store."

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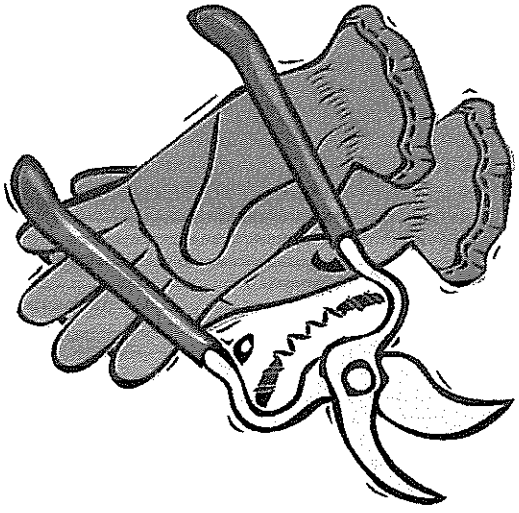

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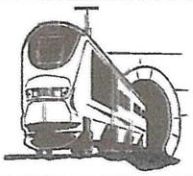
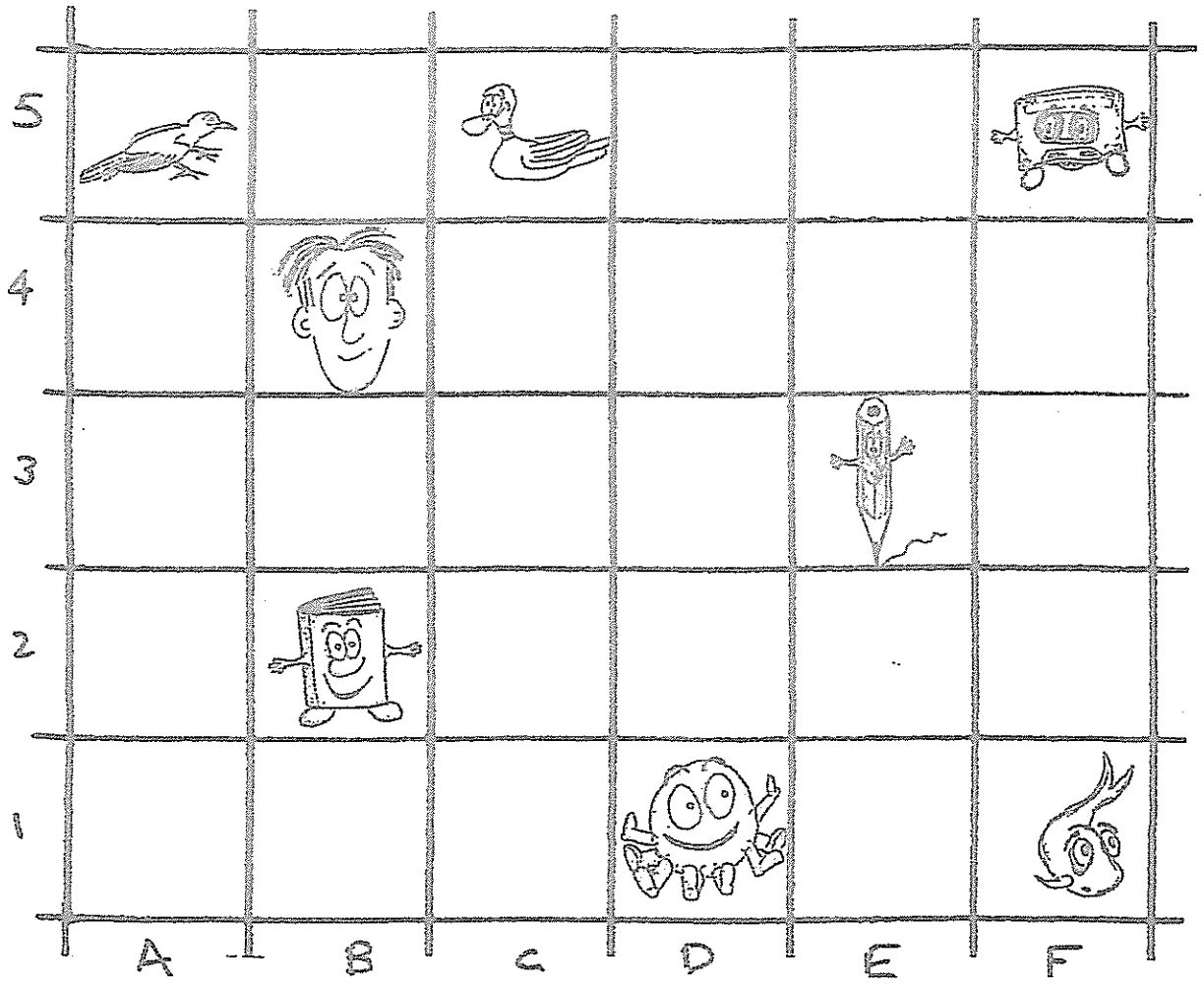
4					
3					
2					
1					
	A	B	C	D	E

Where are these vehicles on the grid?

	car
	racing car
	ambulance
	helicopter
	taxi

	jeep
	aeroplane
	train
	police car
	fire engine

Co-ordinates



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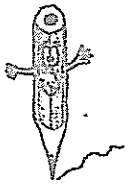
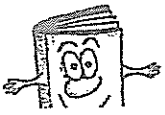
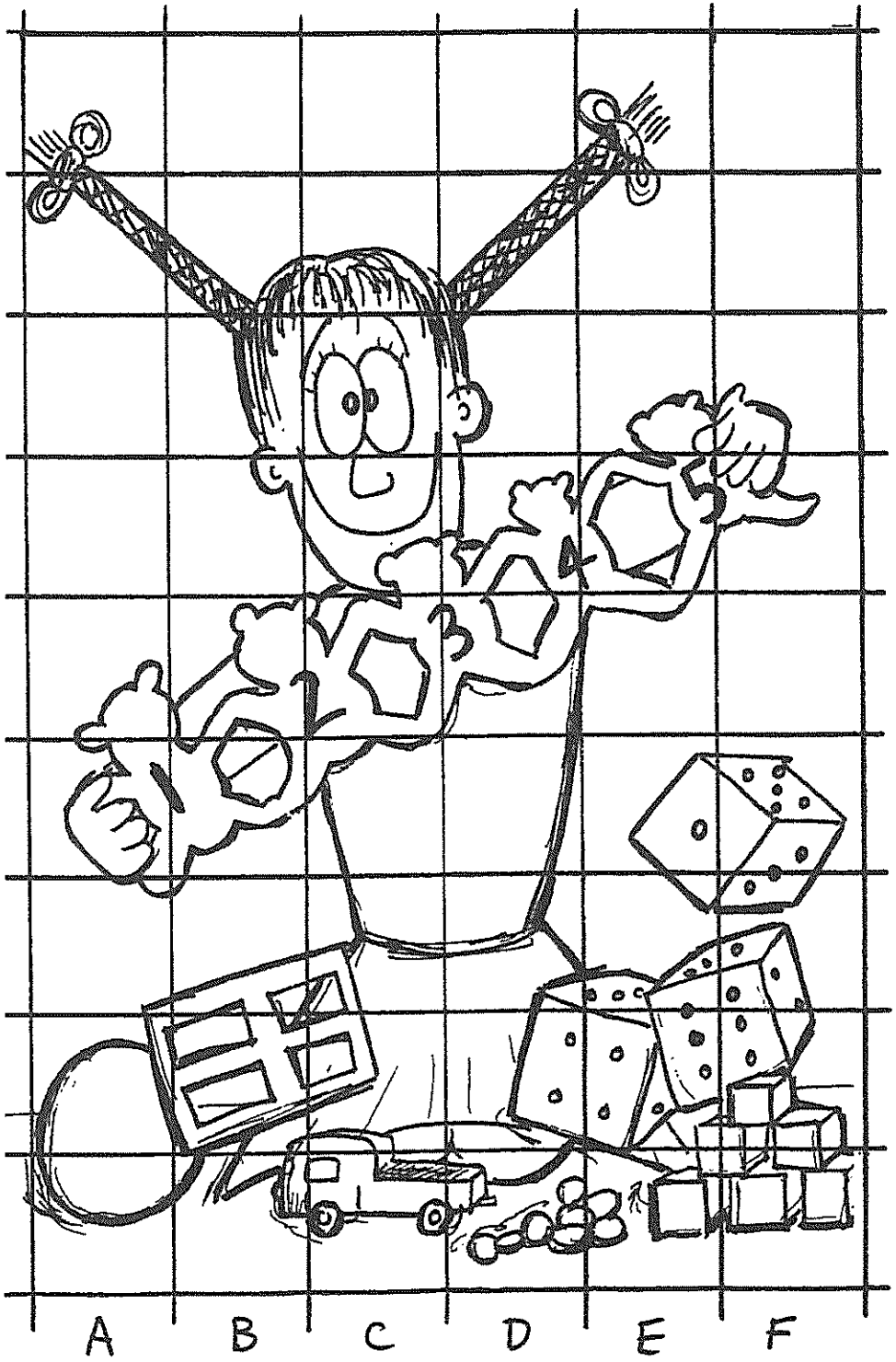
 _____  _____  _____  _____

 _____  _____  _____  _____



Write the co-ordinates of these pieces of the picture:

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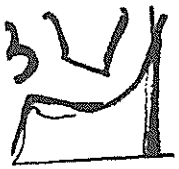
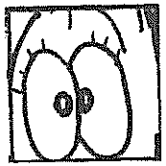
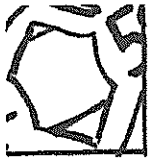
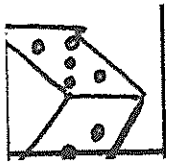
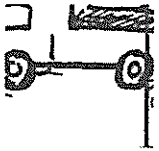
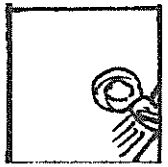


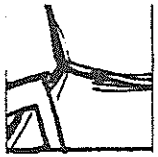


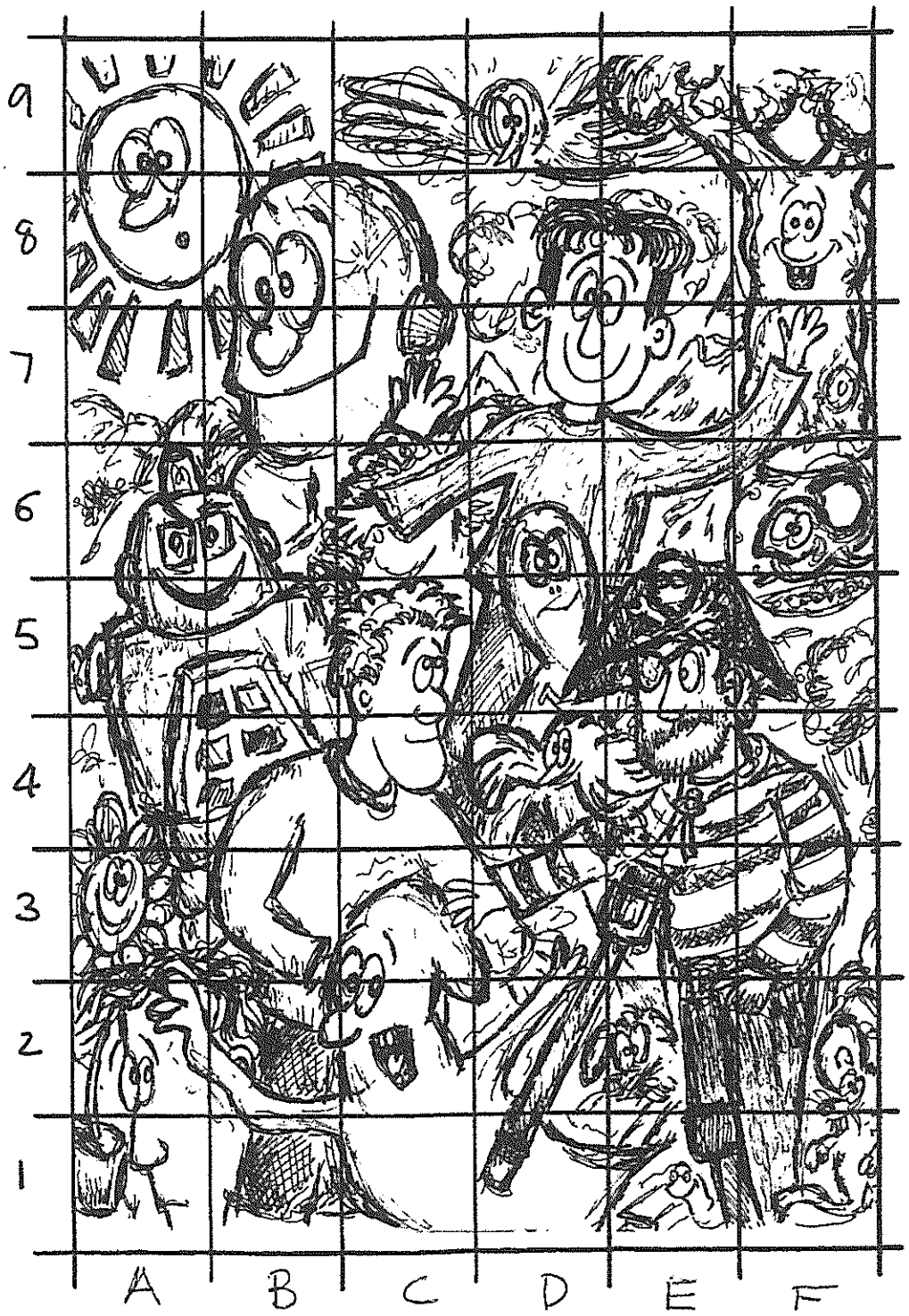






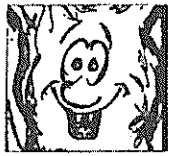


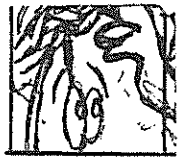


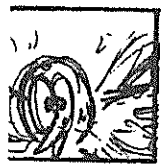


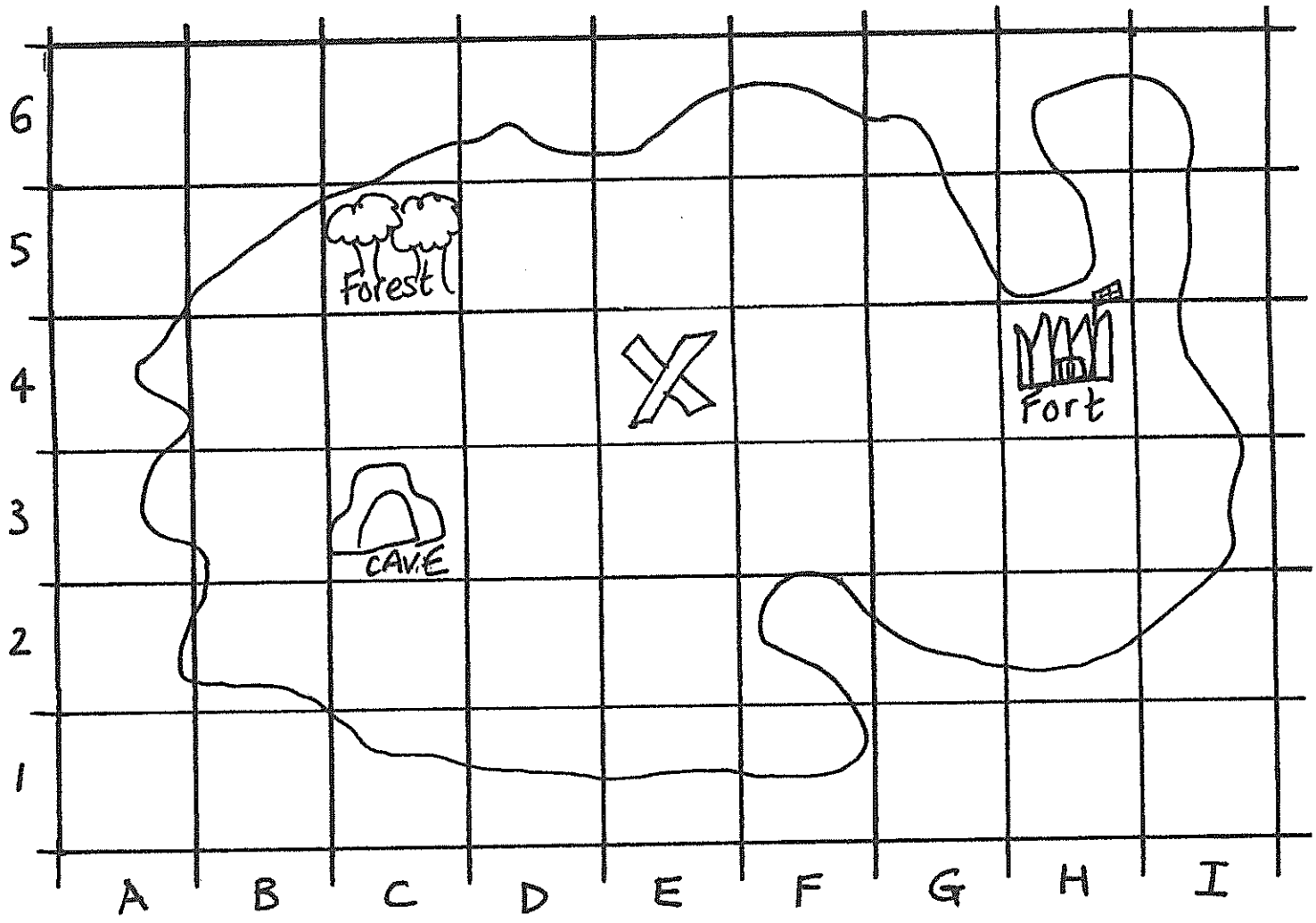
Write the co-ordinates of these pieces of the picture:

A 8









Write down the co-ordinates of ....

(a)  _____

(b)  _____

(c)  _____

(d)  _____

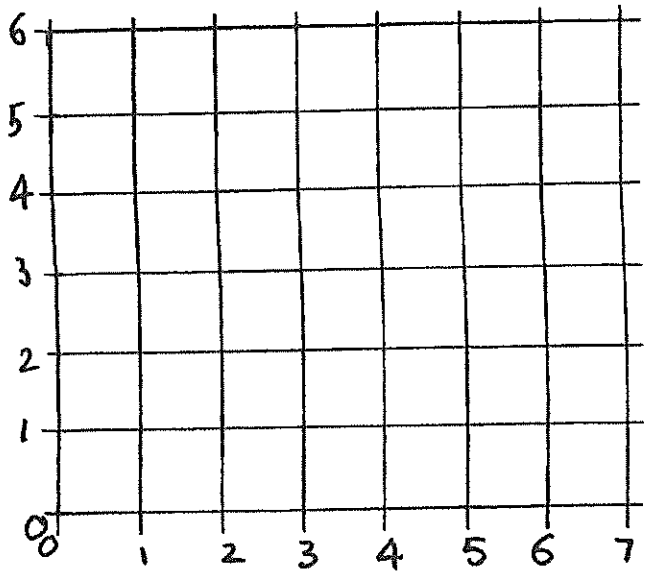
Put these things on the map.

A  at H1. A  at B6.

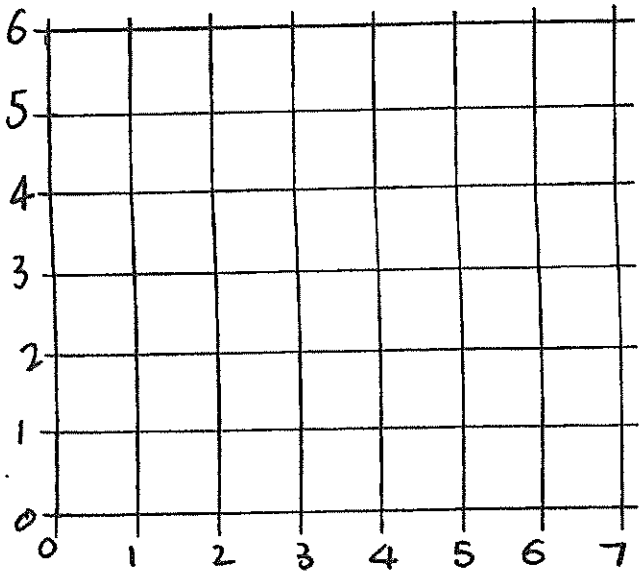
A river going through F2, E3, D4, E5 and E6.

A  at H2. A  at F5.

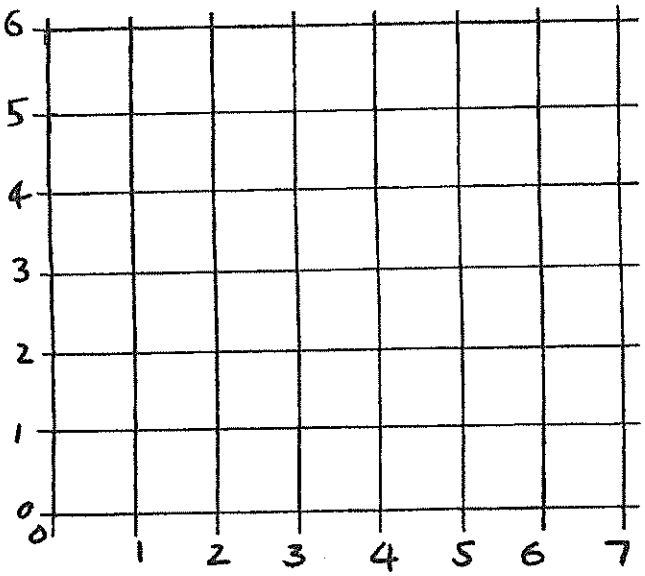
Plot the given points and join them up in order.



(2,2) (5,2) (5,5) (2,2) What shape do you get? _____

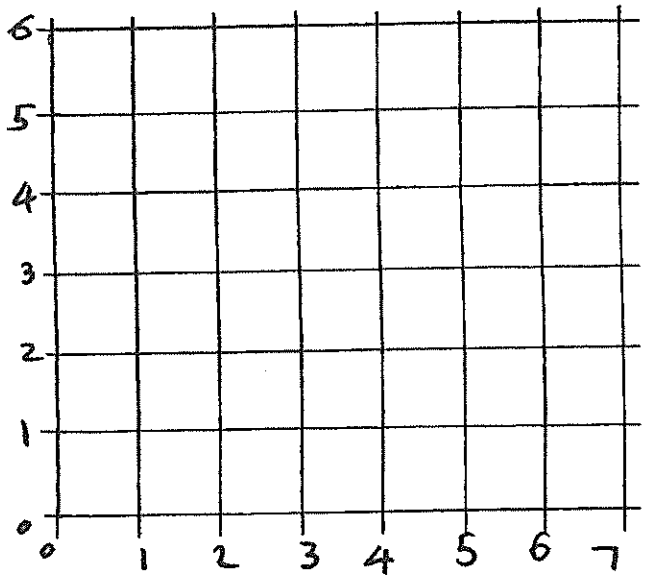


(1,1) (3,5) (6,3) What shape do you get? _____



(1,2) (1,5) (6,2) (6,5) What shape do you get?

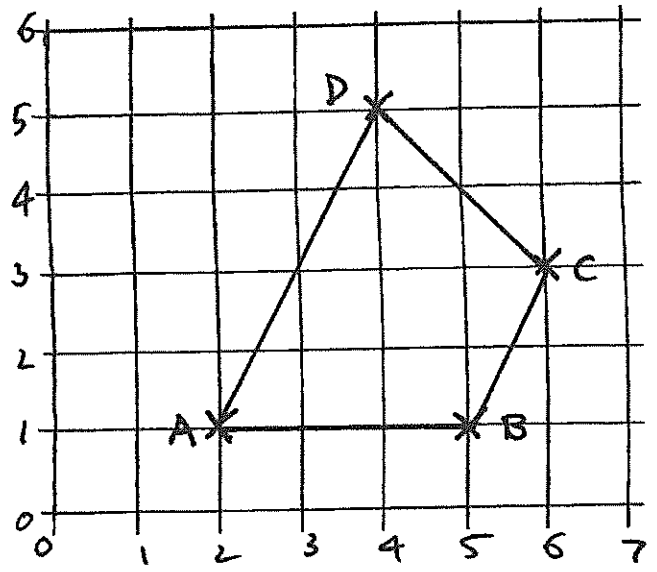
_____



(3,5) (2,4) (1,2) (2,1) (4,2) What shape do you get?

_____

Write the co-ordinates of the points of these shapes.

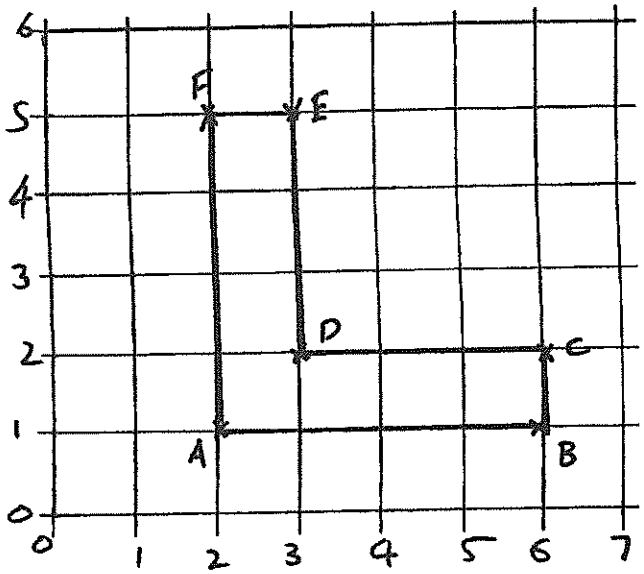


A

B

C

D



A

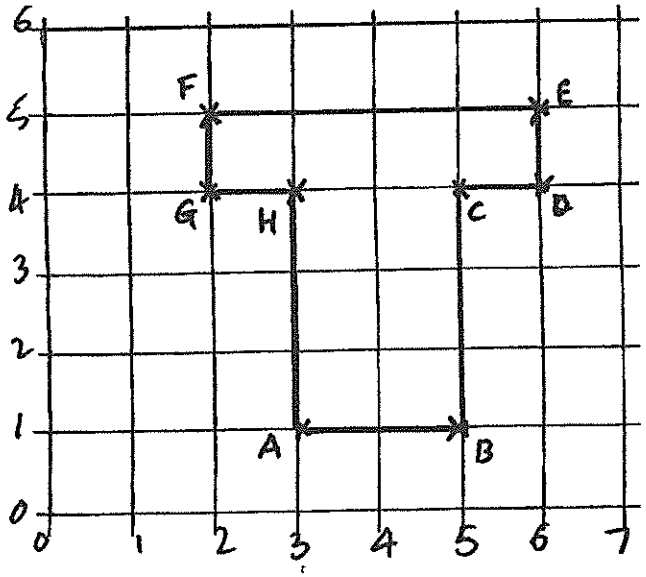
B

C

D

E

F



A

B

C

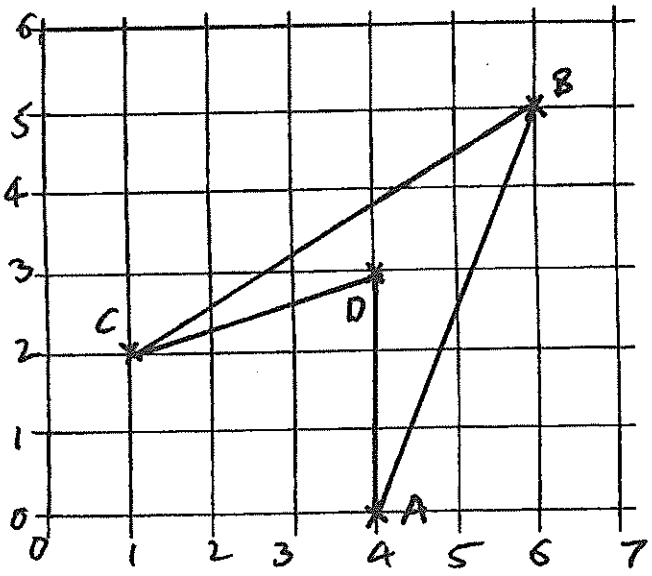
D

E

F

G

H



A

B

C

D

Word Problems Worksheets

ch (Q1-6).

Read and answer each question:

A hotel has 7 floors. The lobby, restaurant and gym are located on the ground floor. The guestrooms are on 1st to 6th floors.

1. If there are 35 standard rooms on each floor, how many standard rooms are there?

2. There are 4 housekeepers working on each floor. One room only requires one housekeeper. If the housekeepers try distributing the work equally, how many housekeepers need to clean more rooms that the others?

3. If each standard room can fit 2 guests, what is the maximum number of guests that all the standard rooms can accommodate?

4. There are 18 suites altogether in the hotel, how many suites are there on each floor if each floor has the same floorplan?

5. Each suite has 3 beds and there is a bed side table beside each side of each bed. How many bed side tables are there in all the suites?

6. Write an equation using "x" and then solve the equation.
The rate charged for a standard room is $250 dollars. A couple stayed in a standard room for x nights and their total room charge is $750.

Multiplication and division word problems

Word Problems Worksheets

Read and answer each question:

A printing company has 6 printing machines.

1. Each printing machine costs $4,500. How much did the company pay for the machines?

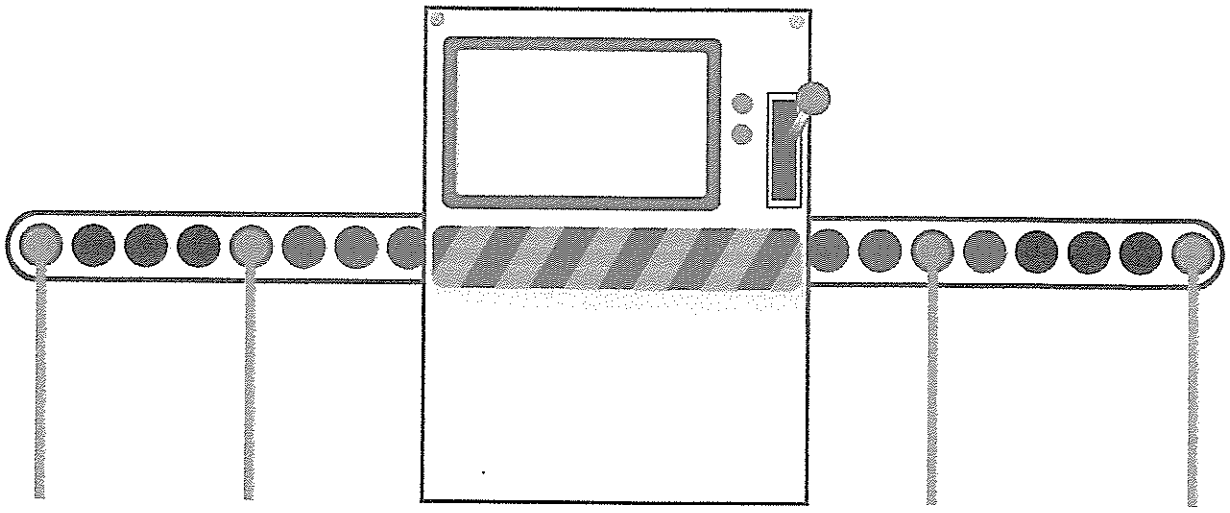
2. All 6 printing machines together can print 222 pages in a minute. How many pages can each machine print per hour?

3. If a new order involved printing 3,800 pages but one of the machines is out of order, how many pages does each working machine print for this order if they each print the same number of pages?

4. There are 3 teams of maintenance staff. If each team take 8-hour shifts and has 4 members, how many maintenance staff are there?

5. There are 5 salespersons and 22 clients. If each client only deals with one salesperson and the clients are divided as equally as possible among the salespersons, how many salespersons are responsible for 5 clients?

6. Write an equation using "x" and then solve the equation.
Three orders are to be done today. Each order involves printing x pages. As a result, there are total of 9900 pages to be printed today.



Read and answer each question:

In a school, there are 12 classes and 30 teachers.

1. In each class, there are 35 students. How many students are there in total?

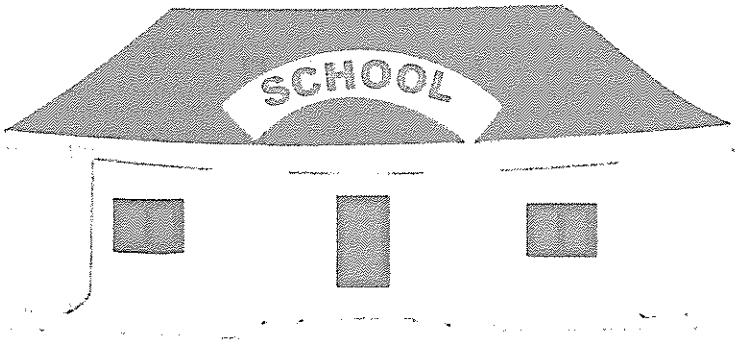
2. If the students are divided equally among the teachers, what is the number of the students each teacher is responsible for?

3. Most of the teachers are assigned to a homeroom. The teachers are divided among the classes so there are an equal number of homeroom teachers for each class. How many homeroom teachers are assigned to each class?

4. How many teachers are not assigned a homeroom?

5. On Friday, 5 classes went on a field trip today. How many students are left at the school?

6. Write an equation using "x" and then solve the equation.
According to the safety guidelines, one teacher is needed for every 25 students on a field trip. Therefore, x teachers went on the field trip with the 5 classes on Friday.



Read and answer each question.

Emma was having a party at her house with her friends.

1. She invited 5 friends and each friend brought 2 other friends. How many guests were there?

2. Assume each car carried 3 guests. Together with Emma's car, how many cars were parked outside her house?

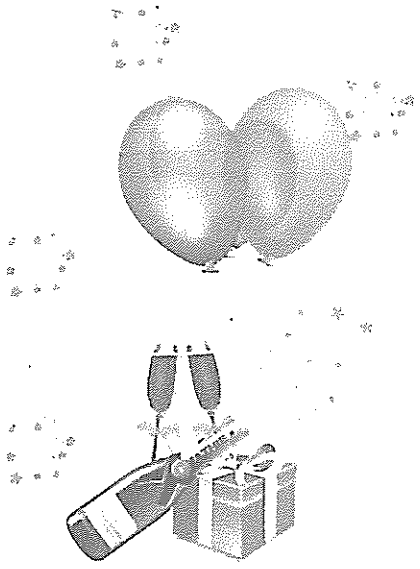
3. Emma placed 25 paper cups and 17 paper plates on the kitchen table. How many more cups were there than the number of guests?

4. She took out 8 packs of chips and put the chips in some bowls for her guests. If each pack of chip can fill up 2 bowls, how many pack of chips were left after she filled up 12 bowls?

5. Emma ordered three pizzas which costs $9 each and she gave a $4 tip to the delivery person. How much change did she get back if she give the delivery person 2 twenty-dollar bills?

6. Write the number sentence that fits this: "Each bottle of juice can fill up 8 cups. To fill up 32 cups, Emma needs 4 bottles of juice."

ch



Addition and subtraction word problems

Word Problems Worksheet

Read and answer each question:

The table shows the number of people visiting an art museum over 3 months.

	January	February	March
Child	28	34	56
Adult	59	?	55
Senior	15	22	?
Total	?	139	?

1. What is the total number of people that visited the art museum in January?

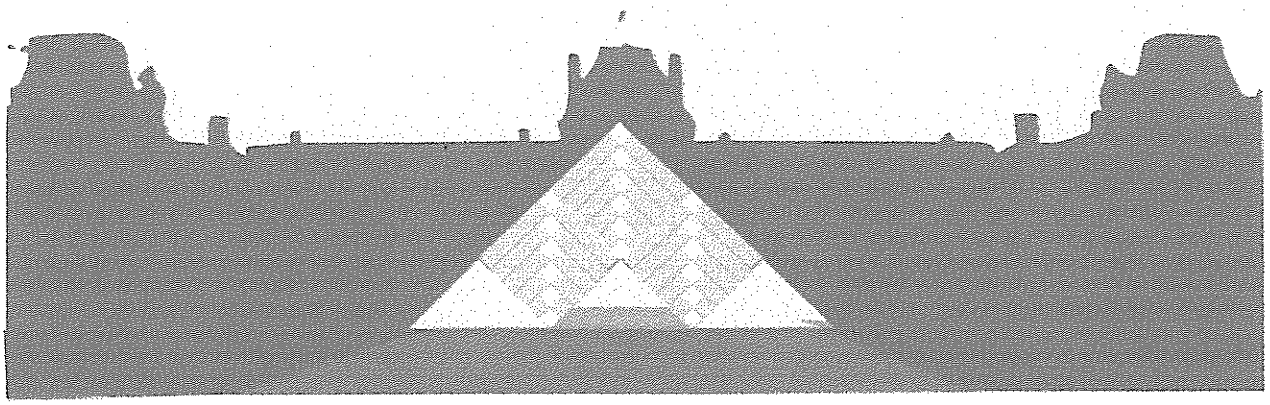
2. Compared to January, how many more children go to the museum in February?

3. How many adults visited the museum in February?

4. 16 more seniors visited in March than the number that visited in January and February combined. How many seniors visited the museum in March?

5. Which month had the highest number of visitors?

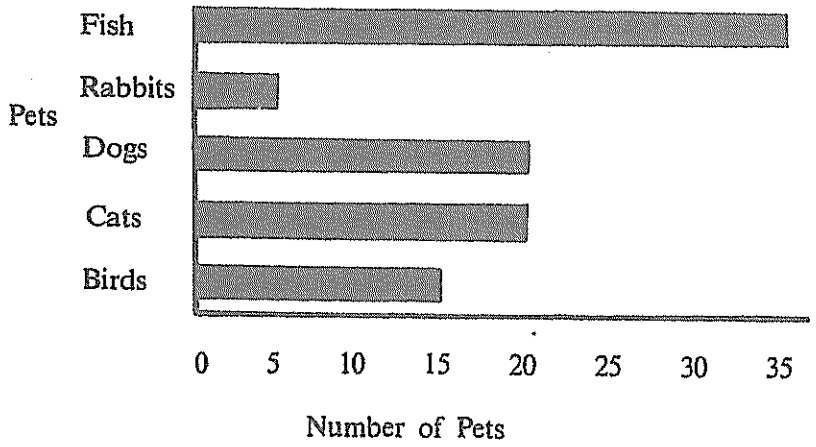
6. Write an equation using "x" and then solve the equation.
"In February, there were x museum pass holders admitted to the museum. 68 of the visitors did not have a museum pass."



UNIT 7

Concept: **Graphs**

PETS OWNED BY CHILDREN IN OUR CLASS



LEVEL 1

1. How many fish and rabbits are there altogether?
2. How many dogs and cats are there altogether?
3. How many more cats are there than birds?

LEVEL 2

1. How many more dogs are there than rabbits?
2. If the number of rabbits doubled overnight, how many rabbits would there be now?
3. If the fish were owned by 5 children and each child has the same number, how many fish does each child own?

LEVEL 3

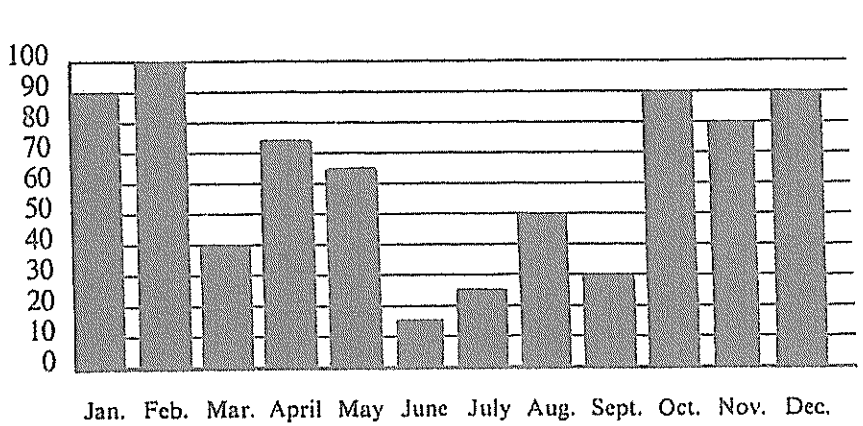
1. If $\frac{1}{4}$ of the dogs are labradors, how many labradors are there?
2. If Jenny owns $\frac{1}{5}$ of the birds, how many birds does she own?
3. How many pets are there altogether?

ch
(Level 3
Q1, 2, 3).

UNIT 16

Concept: **Graphs**

TELEVISIONS PRODUCED LAST YEAR
BY KULLA T.V. PTY LTD



LEVEL 1

1. How many T.V. sets were made in June and July?
2. How many more T.V. sets were produced in July than June?
3. How many T.V. sets were produced in January and February?

LEVEL 2

1. How many more T.V. sets were made in December than November?
2. What was the total number of T.V. sets produced in June, July and August?
3. How many more T.V. sets were made in August than September?

LEVEL 3

1. How many T.V. sets were produced in the first six months of the year?
2. How many T.V. sets were produced in the last six months of the year?
3. How many more T.V. sets were produced in the first six months than the last six months?

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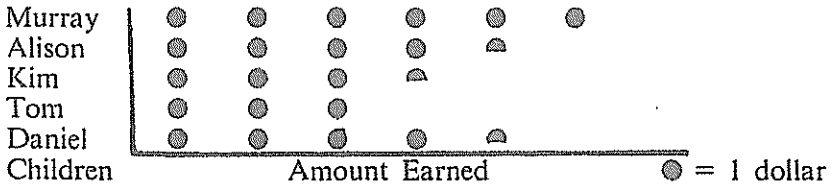
(Level 3
Q1, 2, 3).

UNIT 25

Concept: **Graphs**

MONEY EARNED AFTER SCHOOL EACH WEEK



LEVEL 1

1. Murray and Daniel decided to combine their wages. What is their combined weekly wage?
2. How much more than Daniel does Murray earn?
3. How much more than Tom does Murray earn per week?

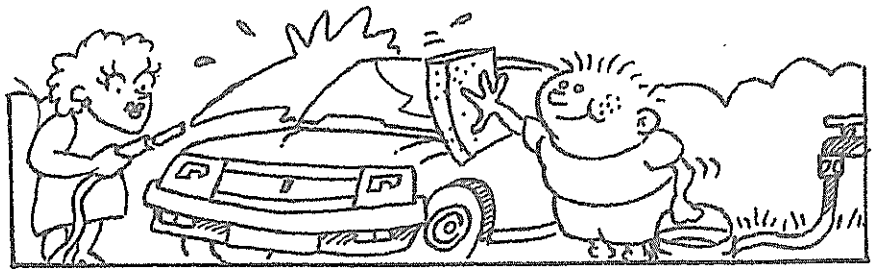
LEVEL 2

1. How much more than Tom does Kim earn per week?
2. Daniel and Kim work at the same shop. How much does the shopkeeper pay them each week?
3. Murray spends $\frac{1}{4}$ of his money on toys. How much is this?

LEVEL 3

1. How much money will Murray have earned after working for 4 weeks?
2. Kim worked for a fortnight. How much did she earn?
3. Murray, Alison and Tom all work at the one shop. What is the wage bill the owner has to pay the children?

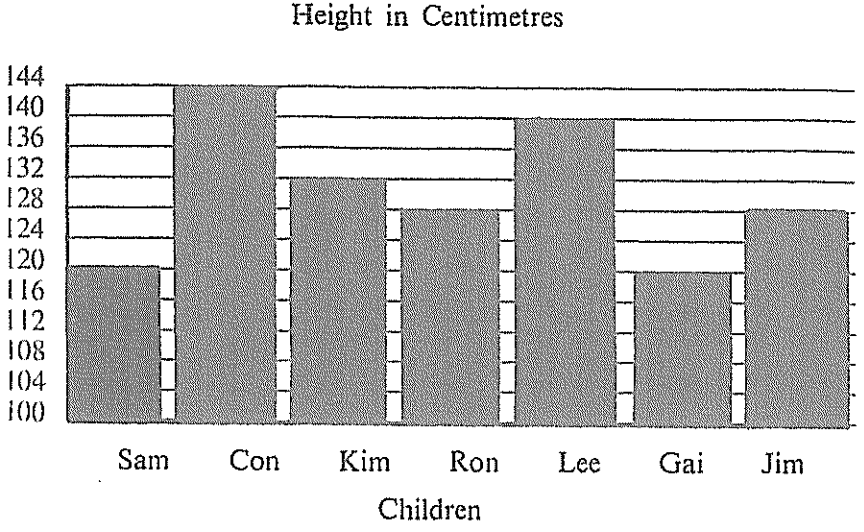
ch
(Level 3
Q1, 2, 3



UNIT 34

Concept: **Graphs**

HEIGHTS OF CHILDREN AT MY PARTY



LEVEL 1

1. How much taller than Sam is Con?
2. How much taller than Ron is Kim?
3. What is the combined height of Gai and Ron?

LEVEL 2

1. How much taller than Ron is Lee?
2. What is the combined height of Ron and Kim?
3. Since the party Lee has grown 3cm. What is her height now?

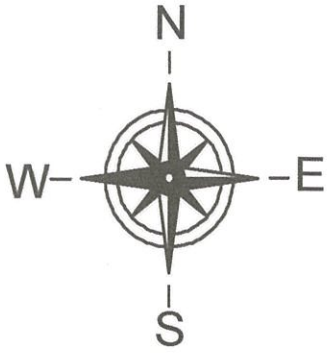
LEVEL 3

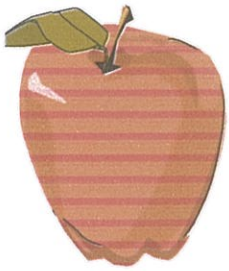
1. What is the combined height of the 3 tallest children?
2. Con's younger brother, Stanley, is half his height. How tall is Stanley?
3. Gai's mother is 45cm taller than Gai. How tall is her mother?

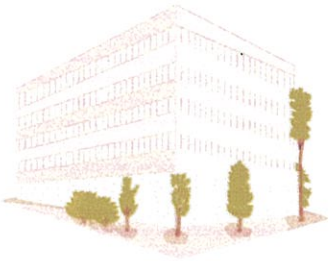
ch
(Level 3
Q1, 2, 3)

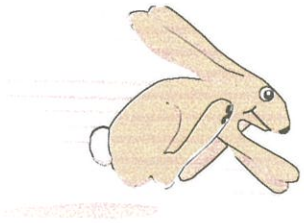
Directions

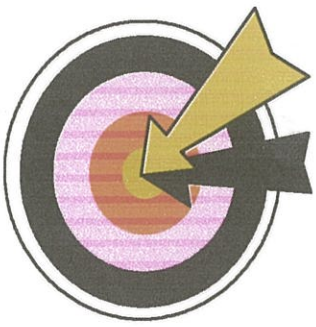
The three people in the center of the picture each have a different problem. Can you tell them which direction they need to go in order to solve their problems?

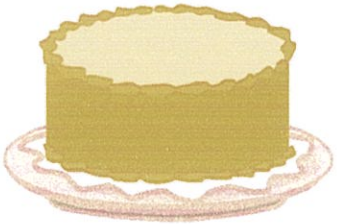












Directions

Task 1.

Can you help the Brown family solve their problems?

1. Mr Brown needs to know the time. Which direction must he face to see the clock?
2. Which way does Mrs Brown go to buy a cake for Jane's birthday?
3. Jane has to feed her rabbit before school. Which way must she walk?
4. On Saturday, the family are going to do some gardening. Which direction is the garden? [They have a lot of clover weeds.]
5. Mr Brown rides his bike to work. He stores it in his garage. Which way does he go to get his bike?

Challenge. - Task 2

1. Mr Brown is facing the target. How much must he turn to face the building where he works?
2. Mrs Brown goes to the cake shop first. Then she decides to buy some apples. Which way does she go?
3. Jane watches her dad go off to work on his bike. Then she checks the time on the clock. How far has she turned? Should she turn clockwise or anticlockwise?
4. Which way is the rabbit running? Give him directions to the garden.
5. Mr Brown rides a circular route to work. Should he go clockwise or anticlockwise. Give reasons for your choice.

Word Problems at the Football Match

1. Gareth goes to watch Leicester play Fulham at Filbert Street. He sets off from home at 2:05 and arrives at Filbert Street at 2:30. How long does it take him to get there?
2. He travels on a bus that is exactly half full. The number allowed on a full bus is 54. How many were on the bus?
3. Outside he joins the other home fans supporting Leicester. He pays £5.50 as a junior. A senior has to pay one and a half times this to get in. How much does a senior pay?
4. He goes to the club shop. He buys a magazine (£1.25), a new scarf (£3.50) and the new away kit socks (£2.30). Can he pay with his £5 note? How much more does he need to add onto his £5 to pay for his things?
5. Gareth is hungry. He only has £2 left. What two items could he buy?

Hot Dog	£1.25	Soup	£1.10
Hamburger	£1.30	Fish	£1.25
Cheeseburger	£1.35	Crisps	£0.50
Chips	£0.65	Cans	£0.70

6. Leicester are seventh in the league. Fulham are eight places below them. Where are Fulham in the league?
7. Fulham have scored 34 goals, but conceded 43. What is their goal difference?
8. The game lasts ninety minutes. There are three minutes added in the first half and six minutes in the second half. The half time break is fifteen minutes long. If the game kicked off at 15:02, when will the referee blow the final whistle?
9. Gareth finds himself in a long queue for the bus home. There are 123 people in front of him and 35 people behind him. How many people are waiting for a bus? There are only single-decker buses running. Each holds 35 people. How many buses will fill and move on before Gareth can get on?
10. He arrives home at 19.22. How long has he been out of the house?

Division and Decimals Problem

Remember to show your workings out!

Museum Trip

Number of children in each class:
Class 5a 11 = 30
Class 5b = 30
Class 6 9 = 32

Museum entry costs:	
Adults	= £4.75
Children	= £2.30

1. How many children in years 5/6?

2. On school trips there must be at least one adult for every ten children. How many adults are needed?

3. How many people altogether on the trip?

4. Look at the admission costs for the museum and work out the total cost for all the adults and children?

5. Coaches cost £140 each. If two coaches are needed what is the total cost of the trip including coach travel and entrance to the museum?

6. How much per person (to the nearest penny) will the trip to the museum cost if everyone (adults and children) pay the same?

7. If the P.T.A. gives each class £45 towards the trip how much to the nearest penny per person will the trip cost now?

Worded Problems

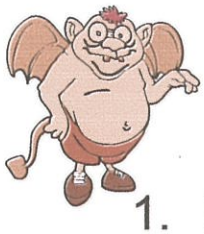
1. Find the sum of 145 and 37.
2. A notepad costs 97p. A pen costs 30p more, how much does the pen cost?
3. Ben is 39 years old, his dad is 25 years older than him How old is his dad?
4. Find the total of 183 and 60.
5. Find the difference between 163 and 27.
6. Jon lives 28km away from school. Amy lives 29km further away. How far away does Amy live from school?
7. We sold 98 packets of crisps on Monday. We sold 39 more than that on Tuesday. How many crisps did we sell on Tuesday?
8. My electricity bill was £189 last quarter, its £43 more this time. How much is my bill this time?
9. There are 87 people on a train, 39 people get on at the next stop, how many people are now on the train.
10. There are 35 people standing up on a train and 139 sat down. How many people are on the train altogether?

Write some addition stories of your own. ← ch

Worded Problems

1. Find the sum of 45 and 37.
2. A notepad costs 47p. A pen costs 30p more, how much does the pen cost?
3. Ben is 34 years old, his dad is 25 years older than him How old is his dad?
4. Find the total of 183 and 60.
5. Find the difference between 63 and 27.
6. Jon lives 15km away from school. Amy lives 29km further away. How far away does Amy live from school?
7. We sold 54 packets of crisps on Monday. We sold 19 more than that on Tuesday. How many crisps did we sell on Tuesday?
8. My electricity bill was £139 last quarter, its £43 more this time. How much is my bill this time?
9. There are 57 people on a train, 39 people get on at the next stop, how many people are now on the train.
10. There are 35 people standing up on a train and 139 sat down. How many people are on the train altogether?

Write some addition stories of your own. ← ch



Worded Problems

1. Find the sum of 45 and 13.
2. A notepad costs 47p. A pen costs 30p more, how much does the pen cost?
3. Ben is 34 years old, his dad is 25 years older than him How old is his dad?
4. Find the total of 113 and 40.
5. Find the difference between 63 and 21.
6. Jon lives 15km away from school. Amy lives 21km further away. How far away does Amy live from school?
7. We sold 54 packets of crisps on Monday. We sold 14 more than that on Tuesday. How many crisps did we sell on Tuesday?
8. My electricity bill was £131 last quarter, its £43 more this time. How much is my bill this time?
9. There are 57 people on a train, 39 people get on at the next stop, how many people are now on the train.
10. There are 35 people standing up on a train and 104 sat down. How many people are on the train altogether?

Write some addition stories of your own.← ch

Worded Problems

1. Find the sum of 15 and 7.
2. A notepad costs 47p. A pen costs 10p more, how much does the pen cost?
3. Ben is 34 years old, his dad is 30 years older than him How old is his dad?
4. Find the total of 15 and 60.
5. Find the difference between 63 and 20.
6. Jon lives 15km away from school. Amy lives 9km further away. How far away does Amy live from school?
7. We sold 24 packets of crisps on Monday. We sold 20 more than that on Tuesday. How many crisps did we sell on Tuesday?
8. What is 45 add 21?
9. There are 50 people on a train, 39 people get on at the next stop, how many people are now on the train.
10. There are 35 people standing up on a train and 10 sat down. How many people are on the train altogether?

Write some addition stories of your own. ← ch

Worded Problems

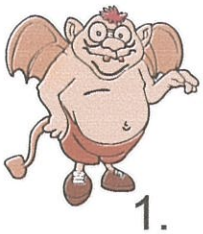
1. Find the difference between 95 and 33.
2. Adam is 59, his son is 32 years younger than him. How old is his son?
3. How many more is 75 than 13?
4. A comic costs 85p. A packet of crisps costs 41p less. How much does a packet of crisps cost?
5. How many less is 32 than 165?
6. What is the total of 26 and 23?
7. My Jacket cost £34 less than my coat. My coat cost £75. How much does my jacket cost?
8. A coat is reduced in the sale by £45. It cost £86 before the sale. How much does it cost now?
9. 52 packets of crisps were sold on Monday. We sold 25 less on Tuesday. How many crisps did we sell on Tuesday?
10. What is the difference between 24 and 61?

Write out some of your own subtraction stories. ← ch

Worded Problems

1. Find the difference between 65 and 13.
2. Adam is 59, his son is 30 years younger than him. How old is his son?
3. How many more is 75 than 13?
4. A comic costs 85p. A packet of crisps costs 40p less. How much does a packet of crisps cost?
5. How many less is 32 than 65?
6. What is the total of 26 and 23?
7. My Jacket cost £34 less than my coat. My coat cost £75. How much does my jacket cost?
8. A coat is reduced in the sale by £40. It cost £66 before the sale. How much does it cost now?
9. 59 packets of crisps were sold on Monday. We sold 25 less on Tuesday. How many crisps did we sell on Tuesday?
10. What is the difference between 24 and 69?

Write out some of your own subtraction stories. ← ch



Worded Problems

1. Find the difference between 25 and 13.
2. Adam is 29, his friend is 10 years younger than him. How old is his friend?
3. How many more is 35 than 13?
4. A comic costs 45p. A packet of crisps costs 20p less. How much does a packet of crisps cost?
5. How many less is 30 than 57?
6. What is the total of 26 and 23?
7. My Jacket cost £31 less than my coat. My coat cost £66. How much does my jacket cost?
8. A coat is reduced in the sale by £30. It cost £66 before the sale. How much does it cost now?
9. 46 packets of crisps were sold on Monday. We sold 15 less on Tuesday. How many crisps did we sell on Tuesday?
10. What is the difference between 14 and 39?

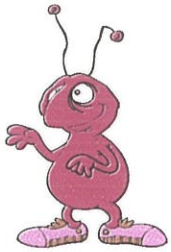
Write out some of your own subtraction stories. ← ch

Worded Problems

1. Find the difference between 15 and 8.
2. Adam is 19, his friend is 2 years younger than him. How old is his friend?
3. How many more is 25 than 13?
4. A comic costs 45p. A packet of crisps costs 10p less. How much does a packet of crisps cost?
5. How many less is 30 than 41?
6. What is the total of 16 and 13?
7. My Jacket cost £30 less than my coat. My coat cost £65. How much does my jacket cost?
8. A coat is reduced in the sale by £40. It cost £66 before the sale. How much does it cost now?
9. 59 packets of crisps were sold on Monday. We sold 22 less on Tuesday. How many crisps did we sell on Tuesday?
10. What is the difference between 22 and 53?

Write out some of your own subtraction stories. ← ch

Worded Problems



1. What is the total of 98 and 76?
2. Find the difference between 93 and 68.
3. I have £98 and spend £37 on a jumper. How much money do I have left?
4. I buy a skirt for £33 and a jacket for £86. How much money have I spent altogether?
5. Find the total of 58 and 67.
6. How many more than 49 is 78?
7. We sold 76 bags of crisps on Wednesday and we sold 35 more on Thursday. How many crisps did we sell on Thursday ?
8. A jacket costing £82 was reduced by £35 in the sale. How much does it cost now?
9. Find the sum of 78 and 134.
10. There are 145 people sat down on a train and 49 stood up. How many people are on the train?
11. It is 98 km to Birmingham. I have already travelled 32km. How many more km to I have to travel?

Worded Problems

1. What is the total of 68 and 16?
2. Find the difference between 93 and 62.
3. I have £68 and spend £33 on a jumper. How much money do I have left?
4. I buy a skirt for £33 and a jacket for £46. How much money have I spent altogether?
5. Find the total of 38 and 62.
6. How many more than 42 is 78?
7. We sold 46 bags of crisps on Wednesday and we sold 31 more on Thursday. How many crisps did we sell on Thursday ?
8. A jacket costing £82 was reduced by £35 in the sale. How much does it cost now?
9. Find the sum of 78 and 94.
10. There are 75 people sat down on a train and 19 stood up. How many people are on the train?
11. It is 48 km to Birmingham. I have already travelled 22km. How many more km to I have to travel?

Worded Problems

1. What is the total of 38 and 11?
2. Find the difference between 53 and 22.
3. I have £38 and spend £23 on a jumper. How much money do I have left?
4. I buy a skirt for £33 and a jacket for £46. How much money have I spent altogether?
5. Find the total of 38 and 62.
6. How many more than 40 is 78?
7. We sold 46 bags of crisps on Wednesday and we sold 40 more on Thursday. How many crisps did we sell on Thursday ?
8. A jacket costing £89 was reduced by £35 in the sale. How much does it cost now?
9. Find the sum of 78 and 14.
10. There are 70 people sat down on a train and 19 stood up. How many people are on the train?
11. It is 48 km to Birmingham. I have already travelled 22km. How many more km to I have to travel?

Problems

Work out the answer to the problems. Show your working out. These are involve multiplying or sharing

1. John bought two pencils at 10p each. How much did he spend?

_____

2. Four friends had eight cakes to share. How many did they get each?

_____

3. Rachel has three packs of Pokémon with 6 stickers in each. How many does she have altogether?

_____

4. A farm has three sheep in each cage. There are 3 cages. How many sheep do they have altogether?

_____

5. Susie has three cats. How many legs do they have altogether?

_____

6. Richard has 2 packets of sweets with 12 sweets in each. How many are there altogether?

_____

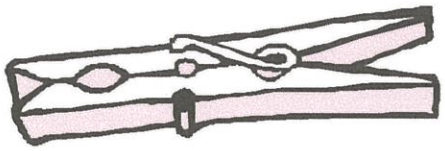
Richard has 4 friends. How many will they get each?

_____

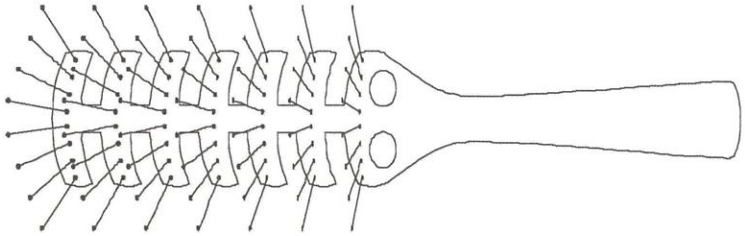
Worded Problems

1. What is the total of 38 and 20?
2. Find the difference between 53 and 12.
3. I have £38 and spend £20 on a jumper. How much money do I have left?
4. I buy a skirt for £33 and a jacket for £40. How much money have I spent altogether?
5. Find the total of 38 and 60.
6. How many more than 40 is 78?
7. We sold 46 bags of crisps on Wednesday and we sold 40 more on Thursday. How many crisps did we sell on Thursday ?
8. A jacket costing £49 was reduced by £25 in the sale. How much does it cost now?
9. Find the sum of 71 and 14.
10. There are 70 people sat down on a train and 19 stood up. How many people are on the train?
11. It is 48 km to Birmingham. I have already travelled 22km. How many more km to I have to travel?

General Store

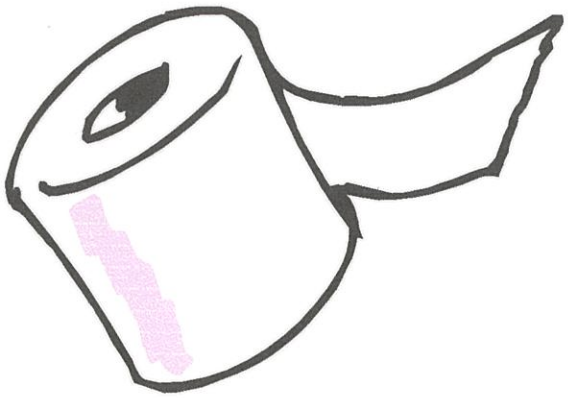


Pegs: £1.44 per dozen

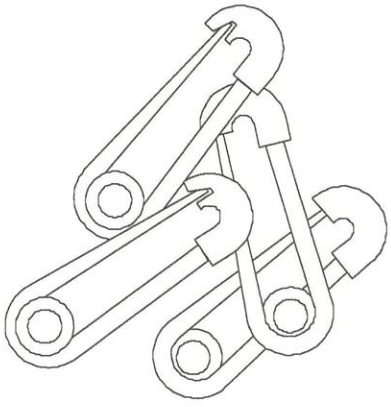


Hairbrush: £1.25

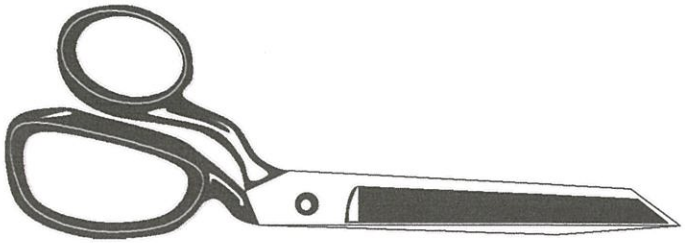
Coat Hanger: £3 for 6



Toilet Rolls: £4 for 10



Safety Pins: 75pence for 25



Scissors: £2.75 each

Questions to go with the 'General Store Sheet'

1. How much would 12 coat hangers cost?

2. If I buy a hairbrush, what change do I get from a £5 note?

3. How much short of £3 is the price of a pair of scissors?

4. If toilet rolls are £4 for 10, how much would one cost?

5. What is the cost of 2 safety pins?

6. How many pegs would I get for £2.88?

7. After the scissors and hairbrush, which is the next most expensive item?

8. If you were to buy all the items as priced on the sheet, what would the total cost be?

9. What is the cost of two coat hangers?

What is the cost difference between 2 pairs of scissors and 10 toilet rolls?

Word problems with Multiplication and Division

1. Eight aliens landed at the North pole. Each alien had 3 laser cannons. How many laser canons were there altogether ?

2. Five locksmiths in Ipswich all sold 10 locks on Monday. They didn't sell any more that week. How many locks had been sold in Ipswich by Friday ?

3. Nine frogs are all dissected into three parts in a Science lesson. By the end of the lesson how many different lumps of frog were there ?

4. There were twenty-four marbles which were dropped at school. Six children went to pick them up. The children collected the same number of marbles each. How many marbles did each child collect ?

5. Mandy sneezed 5 times a day. How many times did she sneeze in a week?

6. Twenty children went to the ten-pin bowling alley. They had to get into groups of 4 as that was the number needed in each bowling lane. How many lanes did they take up ?

7. Marie ate 28 cough sweets in one week. How many sweets did she suck each day ? Do you think her cough got better ?

8. Four geese had a paintball fight against the ducks. All the geese had 9 boxes of paintball balls. How many boxes was that altogether ?

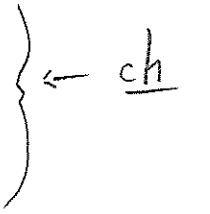
9. Eighteen caterpillars were caught by some year 5 children: Lucy, Emma and Matthew. They wanted to share them equally among themselves. How many caterpillars did each get ?

10. There were 10 roller coasters at Pleasurewood Hills. A school of 250 children visited the theme park. They spread themselves out equally among the different rides. How many children were there at each ride ?

Now make up your own word problems for these sums.

4x8 $21 \div 3$ 10x3 7x 2 $16 \div 4$ $35 \div 5$

Words you might need: divide share equally altogether total



Number riddles

Answers to these number riddles are in the box below.
Cross them off as you use them.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20

Write your answers to these number riddles in the spaces provided.

a	If you multiply me by 5 you have 20.		b	If you divide me by 2 you have 7.	
c	If you multiply me by 9 you have 27.		d	I am 9 more than 4.	
e	Half of me is 9.		f	Subtract twice 5 from 20 and you have me.	
g	If you subtract 10 from me, you have 7.		h	If you add 30 to me you have 50.	
i	I am half of 18.		j	I am 11 more than 8.	
k	$^1/_3$ of me is 2.		l	There are 50 of me in 100,	
m	You have me if you subtract 14 from 30.		n	I am 99 less than 100.	
o	There are five of me in 25.		p	I am $^1/_4$ of 48.	
q	I am half of 30.		r	I am $^1/_3$ of 24.	
s	4 of me make 44.		t	I am $^1/_{10}$ of 70.	

Number sentences 1

Find the missing number represented by a triangle.
Answers to be chosen from the box below.
Cross them off as you use them.

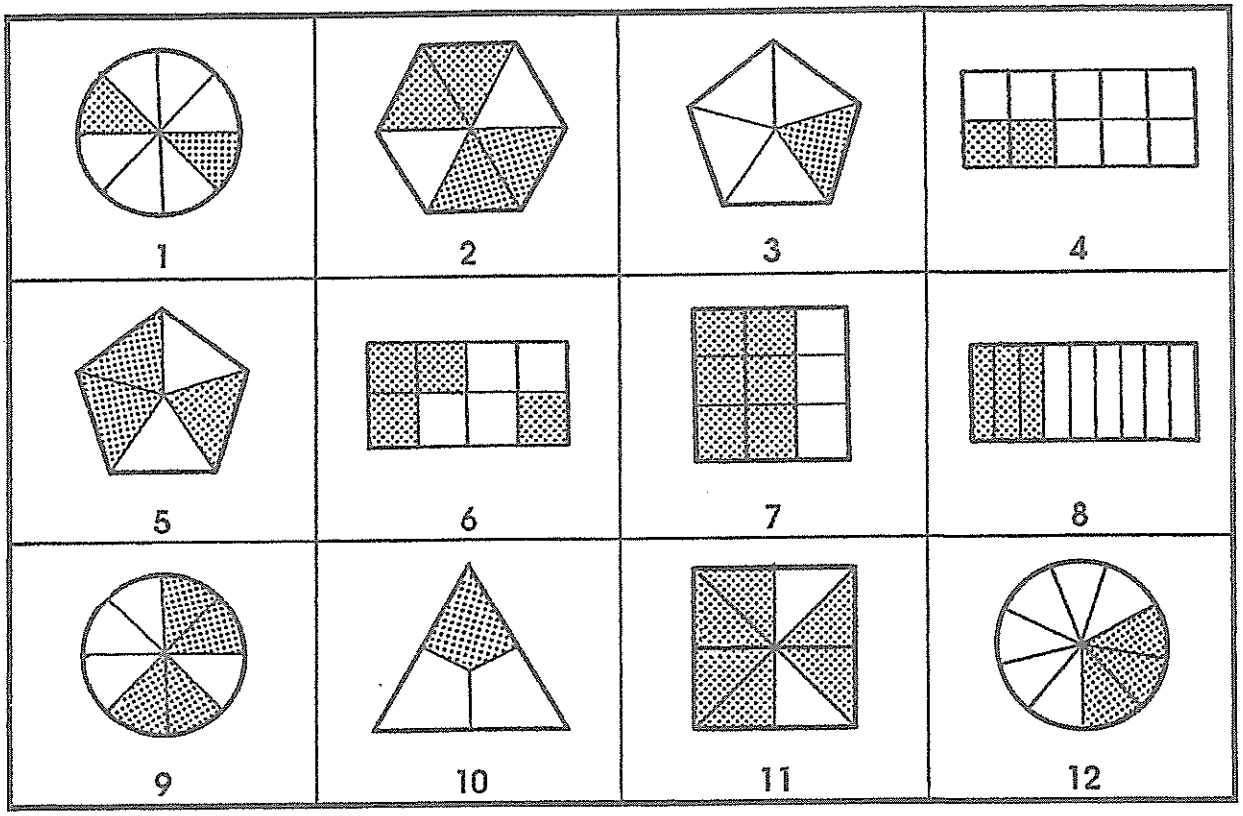
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20

**Each triangle in the following sentences represents a number.
Choose that number from the box above and cross it off when used.
Write your answers in the spaces provided.**

a	38 = (9 x Δ) + 2		b	29 = (14 x Δ) + 1	
c	40 = (2 x Δ) + 4		d	78 = (5 x Δ) + 3	
e	42 = (3 x Δ) + 3		f	56 = (9 x Δ) + 2	
g	50 = (3 x Δ) + 2		h	30 = (2 x Δ) + 2	
i	41 = (13 x Δ) + 2		j	34 = (6 x Δ) + 4	
k	14 = (13 x Δ) + 1		l	105 = (5 x Δ) + 5	
m	66 = (9 x Δ) + 3		n	79 = (7 x Δ) + 2	
o	41 = (3 x Δ) + 5		p	67 = (7 x Δ) + 4	
q	50 = (6 x Δ) + 2		r	56 = (5 x Δ) + 6	
s	40 = (2 x Δ) + 2		t	53 = (3 x Δ) + 2	

Fractions of shapes

Look closely at the shapes.
Use the number under each diagram as an answer.
Write that letter in the space provided.



Work out which diagram answers each of the questions and write the number of that diagram in the space given after each question.	
a Which is the square with $^3/_4$ shaded ? _____	b Which is the circle with $^1/_3$ shaded ? _____
c Which is the pentagon with $^2/_5$ unshaded ? _____	d Which is the rectangle with $^1/_3$ shaded ? _____
e Which is the square with $^2/_3$ shaded ? _____	f Which is the triangle with $^1/_3$ shaded ? _____
g Which is the circle with $^1/_2$ shaded ? _____	h Which is the rectangle with $^1/_5$ shaded ? _____
i Which is the pentagon with $^4/_5$ unshaded ? _____	j Which is the hexagon with $^2/_3$ shaded ? _____
k Which is the circle with $^1/_4$ shaded ? _____	l Which is the rectangle with $^1/_2$ shaded ? _____

Number problems 1

ch (Qa → r)

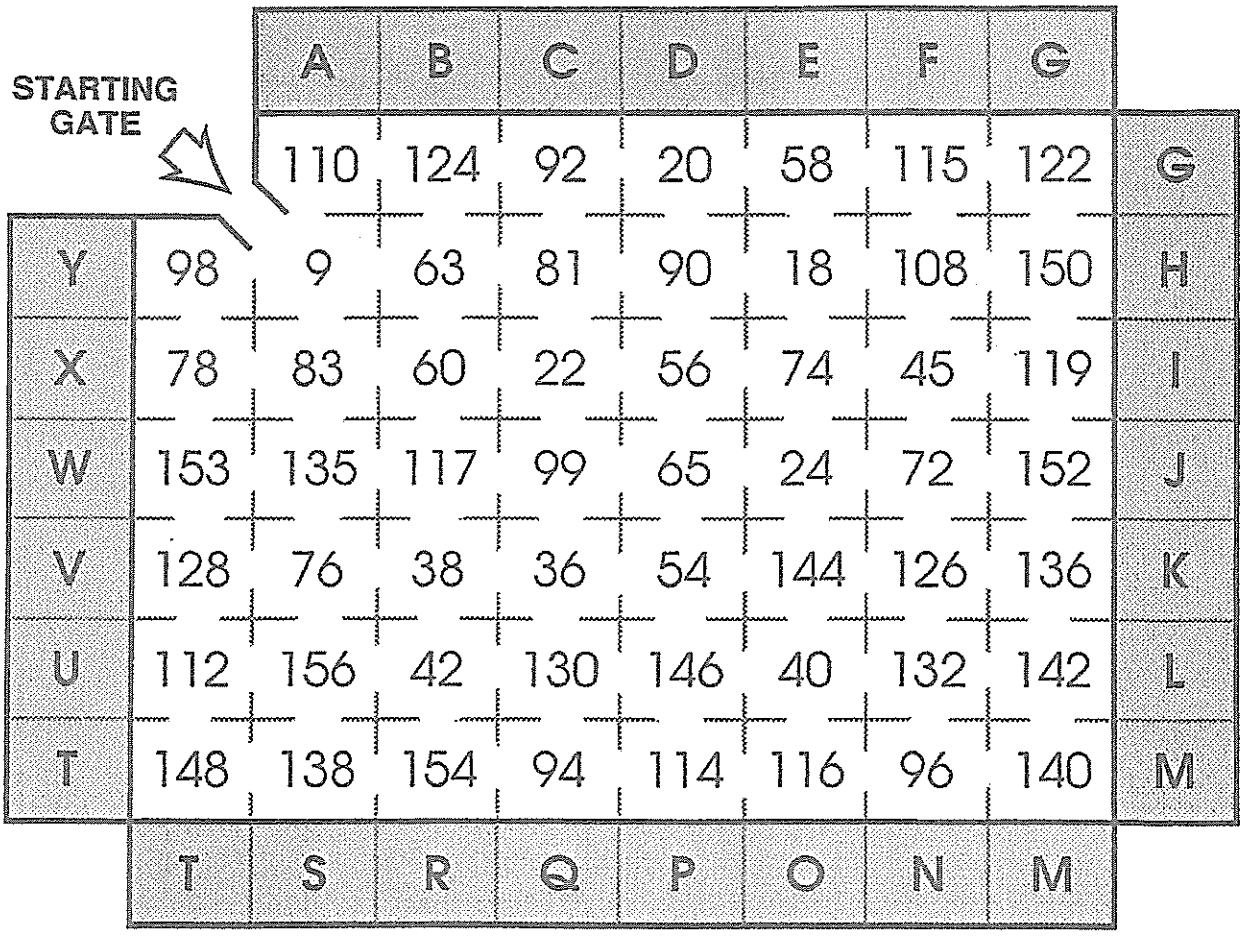
Answers to these problems are in the box below.
Cross them off as you use them.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

a	On an excursion 27 children took a can of drink each. If there were 40 children, how many did not take a can of drink ?	
b	Mangoes are 4 for $5. How many dollars would you pay for a dozen?	
c	Sue had 5 teddy bears and Helen had 6 more than Sue. How many teddies did they have altogether ?	
d	Tom was sick for 2 weeks and 3 days. For how many days was he ill ?	
e	A box holds 2 dozen apples. $^1/_4$ of them are bad. How many good apples are there ?	
f	What number is $^1/_6$ of 36 ?	
g	How many 9's can you subtract from 36 before having zero ?	
h	How many years old is a 24-month old baby ?	
i	How many corners (or angles) have a square and a triangle together ?	
j	How many halves can you make out of $1^1/_2$ apples ?	
k	If a cyclist rides steadily at 20 kilometres an hour, how many kilometres has he travelled in $^1/_4$ hour ?	
l	Robin's grandfather is 5 times as old as she is. If he is 60 now, how old is Robin ?	
m	How many oranges are left over when 37 oranges are shared evenly amongst 9 children? (The oranges are not to be cut up).	
n	How many dollars would Pat have if she saved 50c a week for 20 weeks ?	
o	Out of a dozen marbles, I lost $^1/_3$ of them. How many had I left ?	
p	How many is a quarter of 44 ?	
q	Share $27 among 3 boys. How many dollars would each get ?	
r	How many faces altogether have 2 square pyramids and 1 triangular pyramid ?	

To what letter does the maze take you?

Begin by drawing a line with your pencil or pen,
through the **STARTING GATE** as indicated by the arrow.
The first number you will reach is 9.
Keep moving through a gate to the next square.
You can only move through numbers that can be divided exactly by 9.
You must pass from one square to another until you reach
a square on the edge of the diagram.
You cannot go back over any number that you have passed before.
You will be able to go no farther.
See what letter is just outside this last square.
Write this letter as an answer at the foot of the page.



I arrived at the letter	

Money puzzles

Answers to these puzzles are in the box below.
Cross them off as you use them.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20

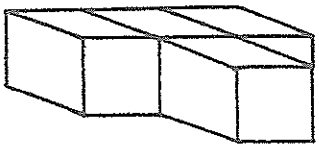
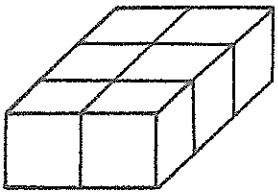
a	How many 50c coins make up $3 ?	
c	If you had $40 in $2 coins, how many coins would you have ?	
e	How many $50 notes make up $700 ?	
g	How many $2 coins make up $32 ?	
i	How many 10c coins make up $1.90 ?	
k	How many $20 notes make up $360 ?	
m	If you had $60 in $5 notes, how many notes would you have ?	
o	What is the least number of coins that make up $8 ?	
q	How many 5c coins make up 40c ?	
s	What is the most number of notes that make up $25 ?	

b	How many 20c coins make up $1.40 ?	
d	How many more $5 notes do you need than 7 to have a total of $40 ?	
f	If you had $5.50 in 50c coins, how many coins would you have ?	
h	How many 50c coins make up a dollar ?	
j	How many $10 notes make up $100 ?	
l	What is the least number of coins that make up $3.50 ?	
n	How many $5 notes make up $75 ?	
p	How many 20c coins make up $2.60 ?	
r	If you had 85c in 5c coins, how many would you have ?	
t	How many $20 notes would you need to have $180 ?	

ch (A, B, C, D)

Painting surfaces

You have to imagine painting cubes for these exercises.

Read these instructions carefully	Answer here	Study these diagrams of cubes.
A You have stuck these three cubes together as shown in the diagram. You then painted all the faces. When they were dry, you pulled them apart. How many faces would you have found to be covered with paint?	_____	
B This time you did the same with these four cubes. How many faces would you have found to be covered with paint?	_____	
C Do the same with these six cubes. How many painted faces are there altogether?	_____	
D Do the same with the ten cubes. How many painted faces are there altogether?	_____