SOLIHULL JUNIOR SCHOOL

9+ ENTRANCE EXAMINATION

MATHEMATICS

SAMPLE PAPER 2

SOLIHULL

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MATHEMATICS

SAMPLE PAPER

Time: 50 Minutes

Attempt as many questions as you can. Write your answers on this paper in the spaces provided. Read the questions carefully and show your working where necessary. Use any method you like when working out each question.

1. a. $5 + \square = 49$

   b. $28 - \square = 13$

   c. $40 + 64 = \square$

   d. $179 + 32 = \square$

   e. $407 - 199 = \square$

2. a. $10 \times 17 =$ _____

   b. $20 \times 100 =$ _____

   c. $350 \div 10 =$ _____

   d. $4200 \div 100 =$ _____

   e. $22 \times 20 =$ _____

   f. $37 \div 10 =$ _____

3. Round the following numbers to the nearest 10.

   a. 39

   b. 845

   c. 4095

4. Round the following numbers to the nearest 100:

   a. 392

   b. 7049

   c. 750

5. Work out the following fractions of quantities:

   a. $\frac{1}{3}$ of 27 = _____

   b. $\frac{2}{5}$ of 30 = _____

   c. $\frac{1}{6}$ of 42 = _____

   d. $\frac{2}{8}$ of 160 = _____

6. Complete these equivalent fractions:

   a. $\frac{4}{\square} = \frac{2}{3}$ b. $\frac{2}{10} = \frac{1}{\square}$ c. $\frac{15}{20} = \frac{3}{\square}$

7. Write the sign > or < for each pair of numbers.

a. 164 ☐ 186

b. 6100 ☐ 6010

c. 7105 ☐ 7098

8. Complete these sequences:

a. 3, 15, 27, 39, ☐ , ☐

b. 4.5, 7, 9.5, 12, 14.5, ☐ , ☐

c. 128, 64, 32, 16, 8, ☐ , ☐

9.

6	8	3	9

a. Which is the largest 4 digit number you can make?

Answer: _____

b. Which is the smallest 4 digit number you can make?

Answer: _____

10. Calculate the following additions and subtractions, using a method of your choice.

a. 127 — 88 _____

b. 149 + 76 _____

c. 3944 + 2157 _____

d. 2433 — 998 _____

11. Laura has two 50 pence coins and three 20 pence coins. She buys an ice cream for £1.25.

How much money does she have left?

Answer: _____

12. The total length of the playground is 245 metres. The football area is 75 metres long and the grassy area is 96 metres.

What is the length of the rest of the playground?

Answer: _____

13. Calculate the following multiplications and divisions, using a method of your choice.

a. 36 x 8 = ☐

b. 56 x 16 = ☐

c. 64 ÷ 9 = ☐

d. 1696 ÷ 8 = ☐

14. Simone gets £7 for washing the family car. She has saved a total of £56.

How many times has she washed the car?

Answer: _____

15. The Kruger family are going on holiday for four weeks.

How many days will they be away for?

Answer: _____

16. a. How many hours in 5 days?

Answer: _____

b. How many minutes in 8 hours?

Answer: _____

c. How many centimetres in 3.5 metres?

Answer: _____

d. How many millilitres in 10 litres?

Answer: _____

17. How long does each journey take?

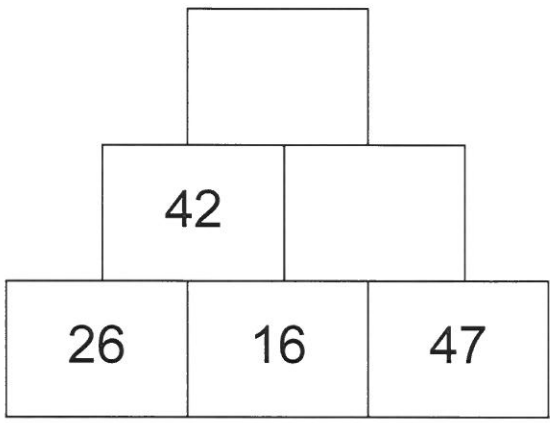
a. Set off at 08.45 and arrive at 09.25.

Answer: _____

b. Set off at 23.55 and arrive at 00.07.

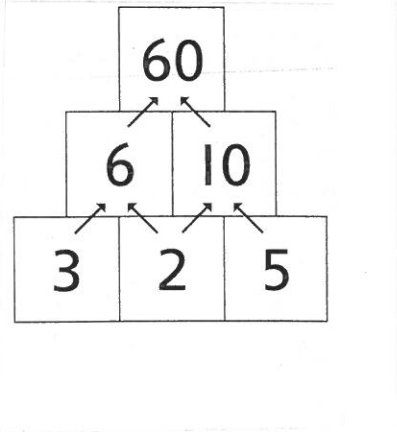
Answer: _____

18. Fill in the rest of the addition **PYRAMID** by adding the two boxes below and writing the answer in the box above.



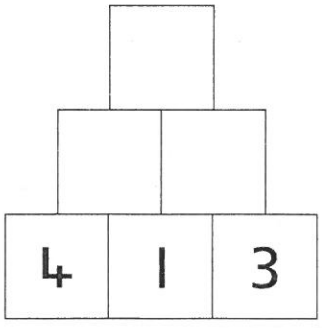
19. In a **MULTIPLICATION** pyramid, pairs of numbers on each row multiply together to make the number above them.

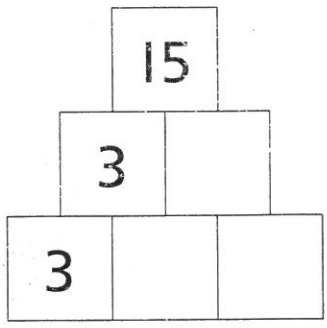
Look at the example below. Starting at the bottom:



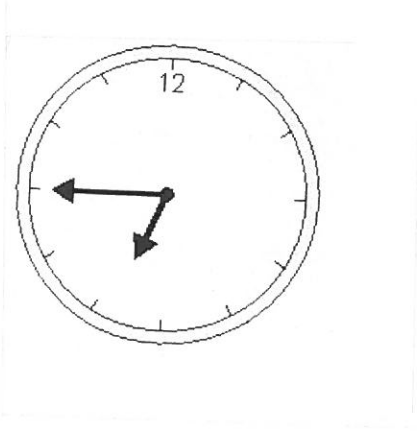
3 x 2 = 6, 2 x 5 = 10 and 6 x 10 = 60.

Now fill in the missing numbers in these pyramids.





20. Here is a clock.



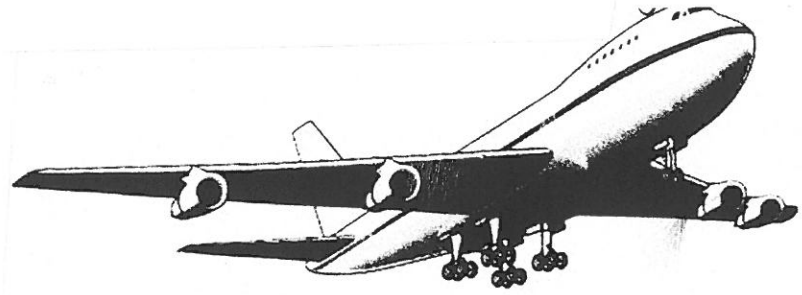
a. What time is it?

Answer: _____

b. How many minutes is it until this clock shows the time 7.30?

Answer: _____

21. An aeroplane takes off at 05.30.



It lands at 07.45.

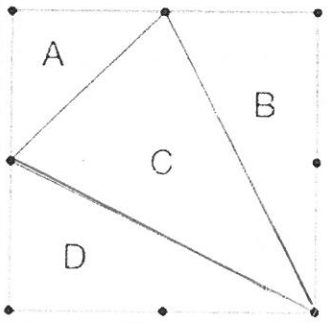
How long was the flight in hours and minutes?

Answer: _____

22. This diagram shows a square with dots at the vertices and at the middle of each side. It is divided into 4 triangles labelled A, B, C and D.

a. Write the letters of triangles which have a right angle.

Answer: _____



b. Which triangles have 2 equal sides?

Answer: _____

23. This table shows when flights take off at an airport.

Flight number	Destination	Take-off time
AX40	Paris	13:00
BH253	Berlin	14:05
CG008	Rome	15:25
DP369	Paris	15:00
EZ44	Lisbon	16:15
FJ994	Dublin	17:25

a. How many flights take off between 3 pm and 5 pm?

Answer: _____

b. How much later does the second flight to Paris take off than the first?

Answer: _____

c. The flight to Lisbon lasts half an hour. What time does it arrive?

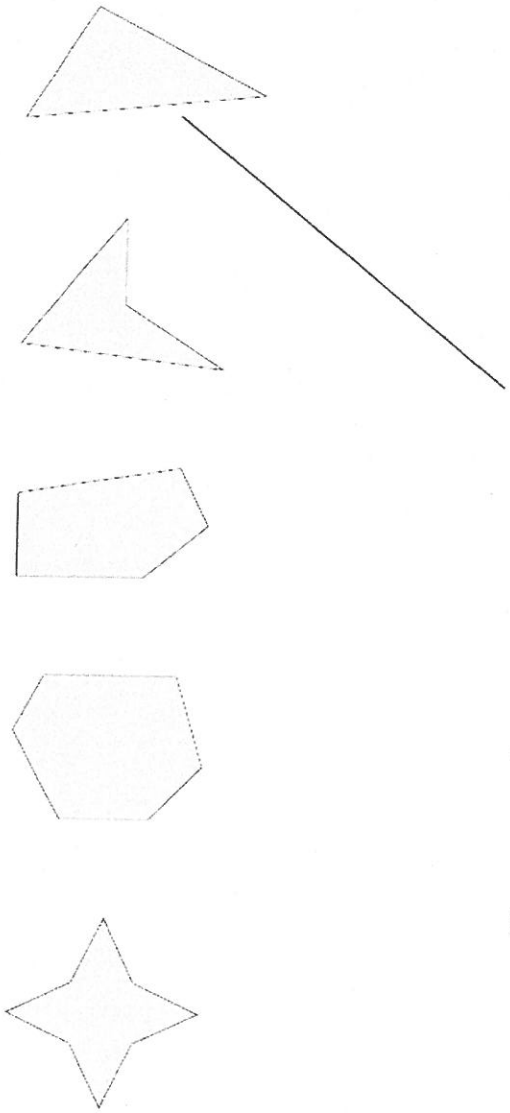
Answer: _____

d. The flight to Rome lasts 40 minutes. What time does the flight arrive?

Answer: _____

24. Match each shape to the correct name.

One has been done for you.



pentagon

triangle

octagon

quadrilateral

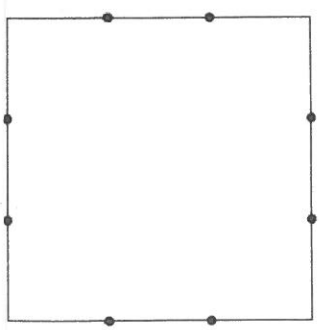
hexagon

25. This square has two dots on each side.

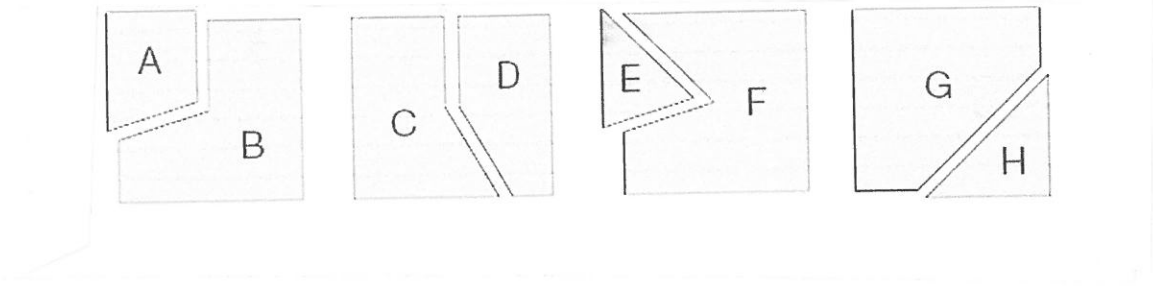
The dots are equally spaced.

Join two dots to divide the square into **two equal parts**.

Use a ruler.



26. Each of these 4 squares has been cut into 2 new shapes.



a. Write the letters of the shapes that are hexagons.

Answer: _____

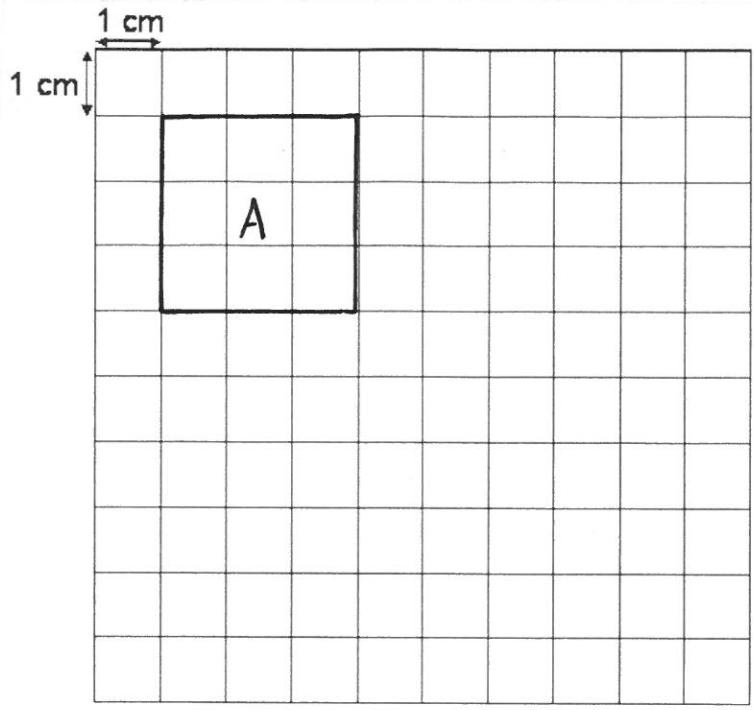
b. Write the letters of the shapes that are pentagons.

Answer: _____

c. How many shapes are triangles?

Answer: _____

27.

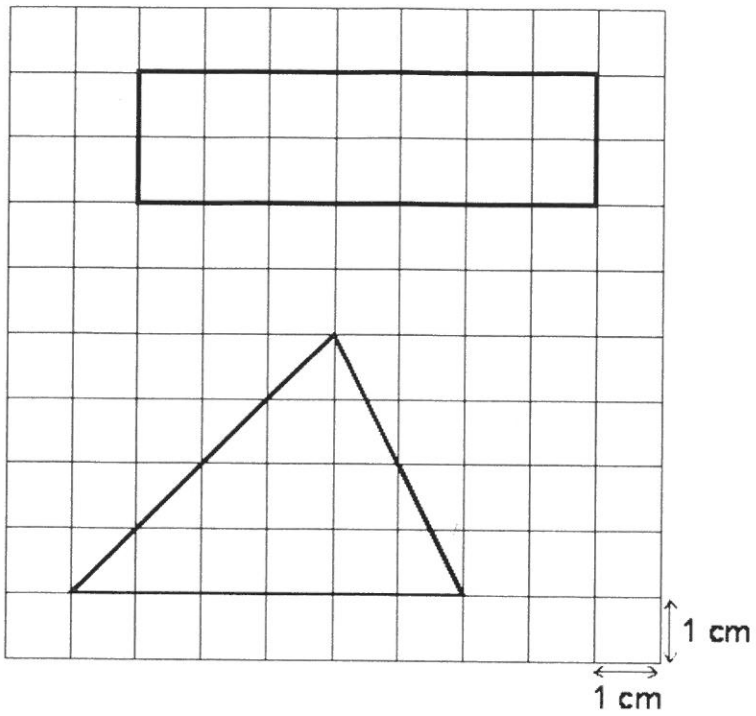


a. What is the area of shape A? _____ cm^2

b. Now draw another square, using the lines of the grid, which has a perimeter of 16 cm.

Answer: _____

28.



Work out the area of each shape.

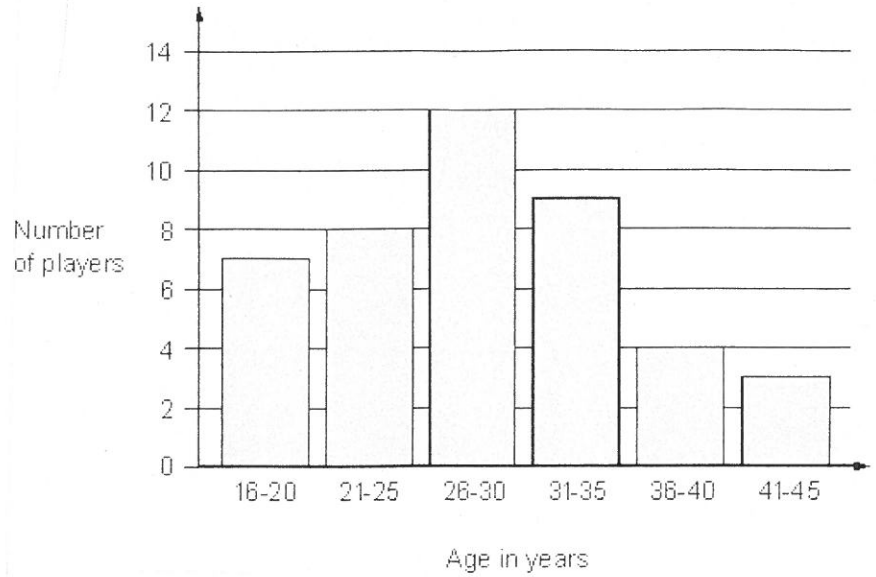
a. Rectangle

Answer: _____ cm^2

b. Triangle

Answer: _____ cm^2

29. This graph shows the age of players at a football club.



a. How many players are aged 16-20 years?

Answer: _____

b. What is the most common age group at the football club?

Answer: _____

c. How many players are aged between 36 and 45 years?

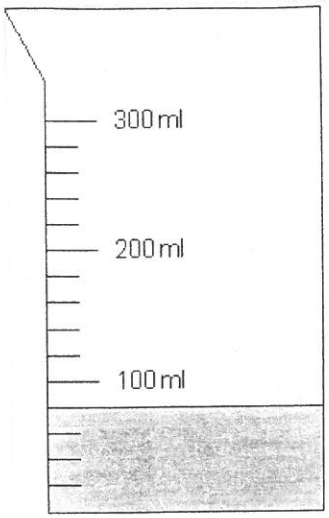
Answer: _____

d. Three new players join the club. They are all 33 years old. Add this information to the graph above.

e. Including the 3 new players, how many players in total are there at the football club?

Answer: _____

30.



Here is a jug with water in it.

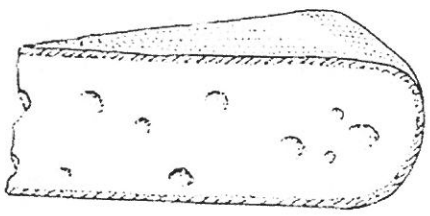
a. How many ml of water are in the jug?

Answer: _____

b. How much more water would I need to add so that there is 200 ml in the jug?

Answer: _____

31. This piece of cheese has a mass of 800g.

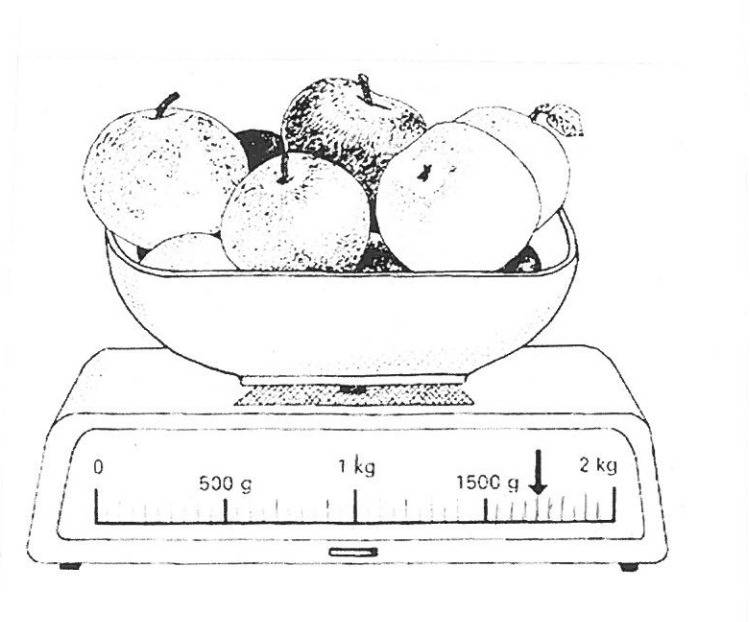




a. Mark an arrow on the scale to show 800g.

b. Mark another arrow to show how much 2 pieces of cheese would weigh.

32. Here are some apples.



a. What is the total mass of the apples?

Answer: _____

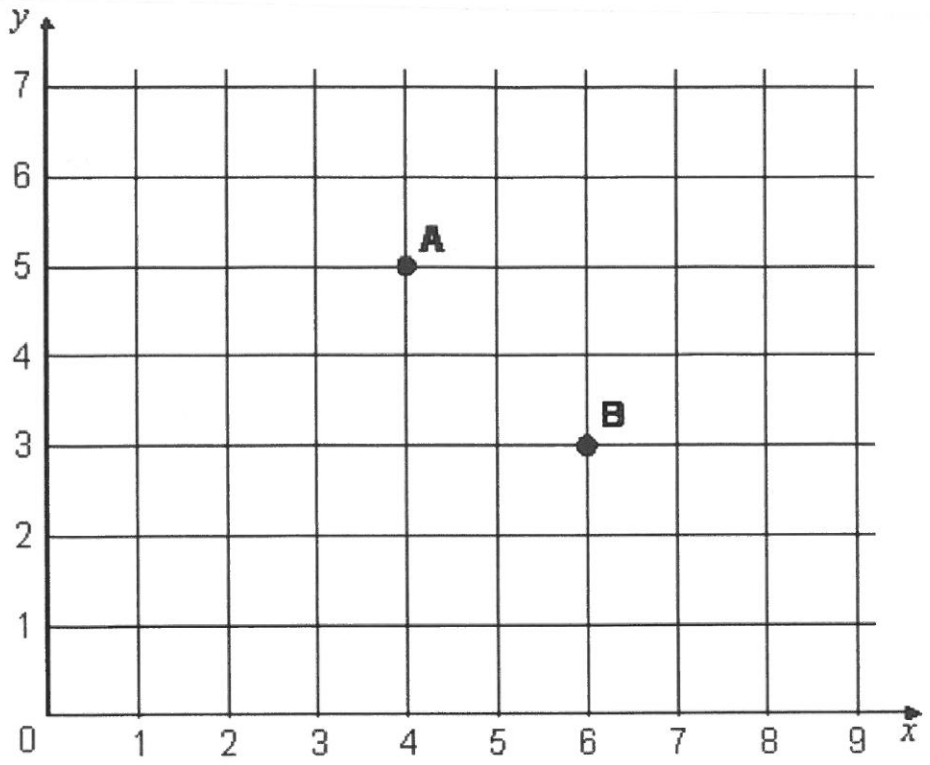
b. If I add one more apple with a mass of 150g, what will be the new total mass of all the apples?

Answer: _____

c. What is this new total mass written in kg?

Answer: _____

33. A, B, C and D are the vertices of a square.



A and B have already been plotted for you.

a. Plot the points C and D.

b. Write the co-ordinates for each of the points.

A = (,)

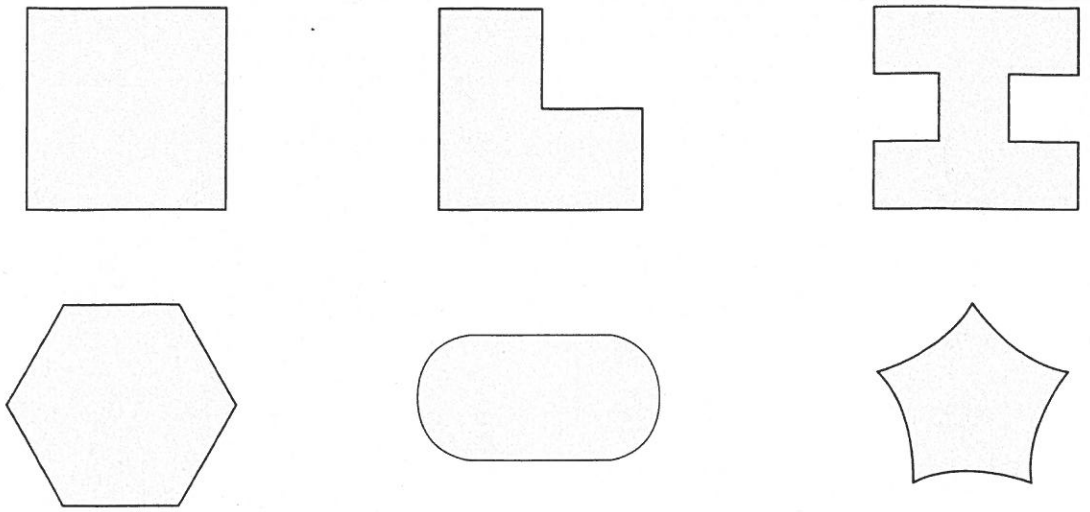
B = (,)

C = (,)

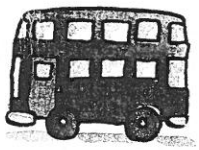
D = (,)

c. Draw a line of symmetry on the square to create 2 isosceles triangles.

34. Draw lines of symmetry on each of these shapes.



35.



This timetable shows the times of buses:

7 : 40 am	8 : 15 am	9 : 20 am	10 : 50 am	11 : 40 am
2 : 10 pm	4 : 30 pm	5 : 10 pm	6 : 30 pm	8 : 00 pm

If you are at a bus stop at these times, how long will you have to wait until the next bus?

a. 9.05 am = ☐ minutes

11.15 am = ☐ minutes

5.05 pm = ☐ minutes

b. 10.35 am = ☐ minutes

7.40 pm = ☐ minutes

4.45 pm = ☐ minutes

You have now completed the test.