



**MERCHANT
TAYLORS'
SCHOOLS**

For Boys and Girls
aged 4 to 18 years

PRACTICE MATERIAL FOR 11+ MATHEMATICS ENTRANCE EXAM

Time allowed : 1 Hour
No calculations permitted
and show all your working outs

The Best Education for Life



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Number

1. The digits 1, 2 and 3 are missing from each calculation.

Fill in the boxes to complete the problems

a)

$$\begin{array}{r} 4 \quad \square \quad \square \quad 6 \\ + \quad 4 \quad 6 \quad 9 \quad \square \\ \hline 9 \quad 0 \quad 0 \quad 8 \end{array}$$

b)

$$\begin{array}{r} 9 \quad 7 \quad 0 \quad \square \\ - \quad 5 \quad \square \quad \square \quad 7 \\ \hline 4 \quad 5 \quad 7 \quad 6 \end{array}$$

2. Five classes are going on a school trip and there are 27 children in each class. Each bus holds 45 children. How many buses will be needed?

Answer: _____

3. Tom's Gran is 84 years old. His mum is 35 years younger than his Gran and Tom is 38 years younger than his Mum. How old is Tom?

Answer: _____

4.

1	2	3	4	5	6	7	8	9	10
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- a) Underline the numbers that are factors of 36
- b) Circle the numbers that are factors of 28

5. a) Is 374 a multiple of 3?

Answer: _____

b) Which number between 102 and 108 is a multiple of 5?

Answer: _____

c) 532 is a multiple of 4. True or false?

Answer: _____

d) Which of these numbers does not divide exactly into 270?

2 3 4 5 6 9

Answer: _____

6. Complete these sentences by ticking the correct statements - an odd number, an even number or a square number.

More than one tick may be needed for each statement.

	An odd number	An even number	A square number
A number multiplied by itself makes ...			
16 is ...			
25 is ...			
41 is ...			
30 is ...			
... can be divided exactly by 2			
... cannot be divided exactly by 2			
... always ends in 1, 3, 5, 7 or 9			
... always ends in 0, 2, 4, 6 or 8			

7. A shop buys 126 sweaters. If each sweater is sold for £65, how much money does the shop take in total?

Answer: _____

8. Here is the cost of ice cream.

ICE CREAM			
	Small	Large	Extra Large
Cone	65p	£1.00	£1.30
Choc-chip	85p	£1.20	£1.50
Tub	70p	£1.05	£1.35
Choc flake	15p		
Raspberry sauce	10p		

- a) Sam orders a small cone with a choc flake and sauce.

What is the total cost?

Answer: _____

- b) Alice buys two extra-large tubs of ice cream.

What change will she get from £5?

Answer: _____

- c) Circle the type of ice cream with the extra-large size that is double the price of a small.

Cone

Choc-chip

Tub

9. Draw lines to match the improper fractions to their equivalent mixed numbers.

$$\frac{16}{5}$$

$$\frac{5}{2}$$

$$\frac{5}{4}$$

$$\frac{14}{3}$$

$$\frac{7}{6}$$

$$\frac{11}{4}$$

$$1\frac{1}{6}$$

$$2\frac{1}{2}$$

$$4\frac{2}{3}$$

$$2\frac{3}{4}$$

$$3\frac{1}{5}$$

$$1\frac{1}{4}$$

10. Write the missing numbers in each of these fractions

a) $\frac{?}{4} = \frac{3}{12}$ _____

b) $\frac{1}{4} = \frac{5}{?}$ _____

c) $\frac{2}{?} = \frac{14}{21}$ _____

d) $\frac{3}{4} = \frac{?}{20}$ _____

11. Simplify these fractions

a) $\frac{9}{12}$ _____

b) $\frac{6}{12}$ _____

c) $\frac{8}{24}$ _____

d) $\frac{15}{40}$ _____

12. Write these fractions in order, starting with the smallest

$$\frac{2}{3}$$

$$\frac{5}{6}$$

$$\frac{1}{2}$$

$$\frac{5}{12}$$

$$\frac{3}{4}$$

$$\frac{7}{12}$$

smallest								largest
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13. Write the correct symbol <, > or = in each box

$$\frac{3}{5}$$

$$\frac{1}{2}$$

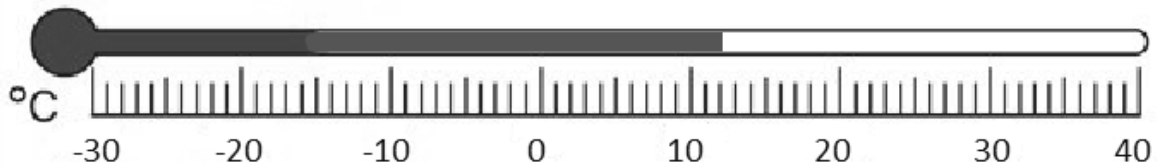
$$\frac{6}{12}$$

$$\frac{5}{6}$$

$$\frac{9}{10}$$

$$\frac{5}{7}$$

14.



a) What temperature is shown on this thermometer?

Answer: _____

b) What would the thermometer reading be if the temperature dropped by 10°C ?

Answer: _____

c) What is the difference between -4°C and -11°C ?

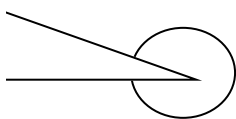
Answer: _____

d) In Paris the temperature is 14°C , but Rome is 9°C hotter. What is the temperature in Rome?

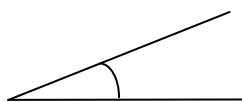
Answer: _____

Shape, Space and Measures

15. What are each of these angles: acute, obtuse or reflex?



a) _____

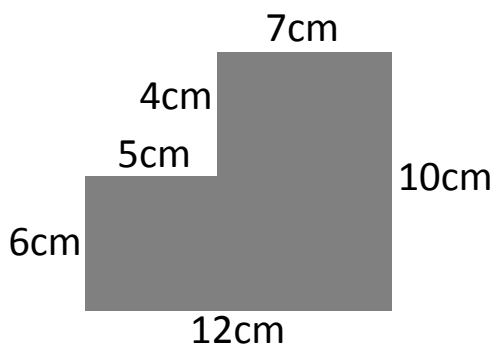


b) _____



c) _____

16. Find the area and perimeter of this shape.



Area: _____ cm^2

Perimeter: _____ cm

17. Solve these word problems

- a) It took Ross 40 minutes to do his homework. He started at 4:45pm.
What time did he finish?

Answer: _____

- b) A train leaves London at 13:35 and arrives at Luton at 14:05.
How long was the train journey?

Answer: _____

- c) In a recipe it says cook the cake for $1\frac{1}{2}$ hours. The timer can only
be set in minutes.

How many minutes should the timer be set for?

Answer: _____

- d) Beth's swimming lesson starts at 11:30am and lasts for 50 minutes.
What time does the lesson end?

Answer: _____

18. Draw a line to join equivalent measures.

64 mm 560 cm 3.9 tonnes 6.4 kg 3.9 km 5.6 litres

5600 ml 3900 m 6400 g 6.4 cm 3900 kg 5.6 m

19. Answer these questions.

a) $6370 \text{ mm} + 455 \text{ mm}$

Answer: _____

b) $15.8 \text{ litres} + 9.2 \text{ Litres}$

Answer: _____

c) $289 \text{ g} + 41 \text{ g}$

Answer: _____

d) What is 500 g less than 2 kg?

Answer: _____

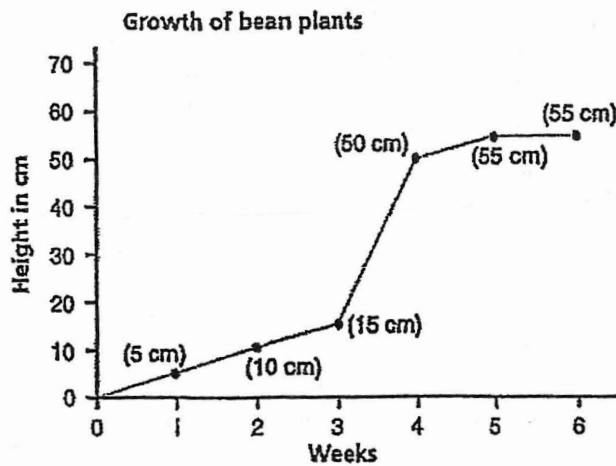
e) What is 600 ml added to 1.9 litres

Answer: _____

f) What is the total length of 3.4 m, 120 cm and 90 mm?

Answer: _____

20. Look at the line graph and answer these questions.



a) How tall was the bean after 1 week?

Answer: _____

b) How much did the bean grow between weeks 3 and 4?

Answer: _____

c) Between which two weeks was there no change in height?

Answer: _____

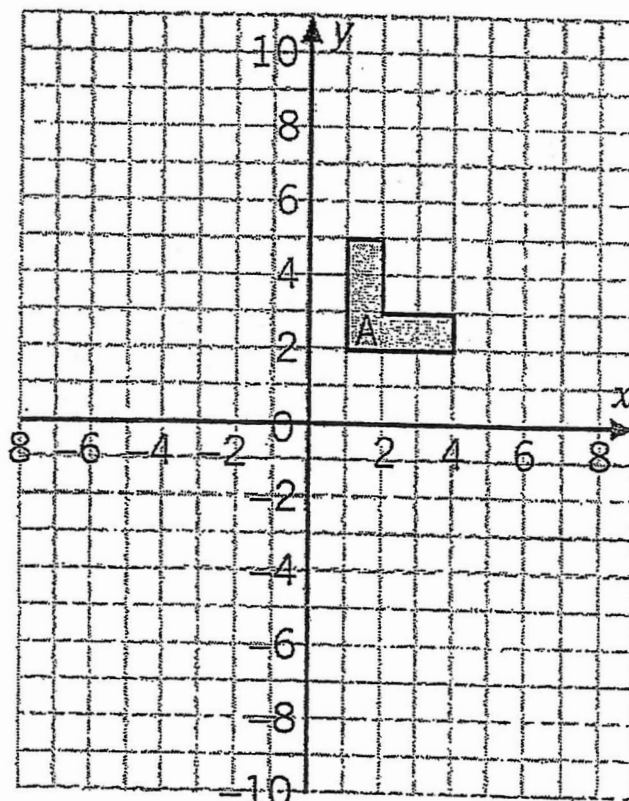
d) How tall was the bean after 6 weeks?

Answer: _____

21. On the grid opposite, carry out the following transformations.

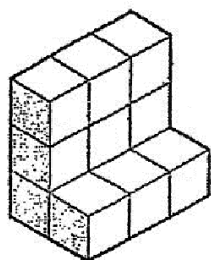
a) Reflect shape A in the y-axis; call the shape P.

b) Reflect shape A in the x-axis; call the shape Q.



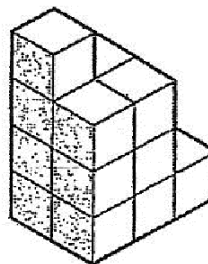
22. Each cube has a volume of 1cm^3 . What are the volumes of the following shapes?

a)



Volume: _____ cm^3

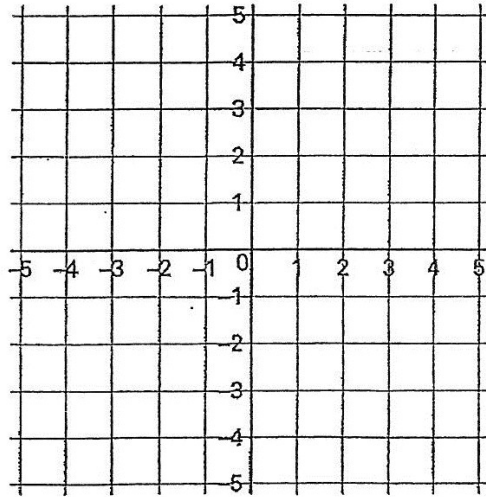
b)



Volume: _____ cm^3

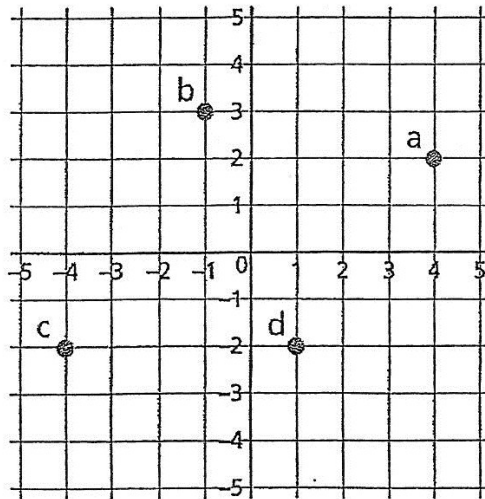
23. Plot these co-ordinates.

- a) Point a (3, 2)
- b) Point b (1, 4)
- c) Point c (-2, 2)
- d) Point d (-3, -1)



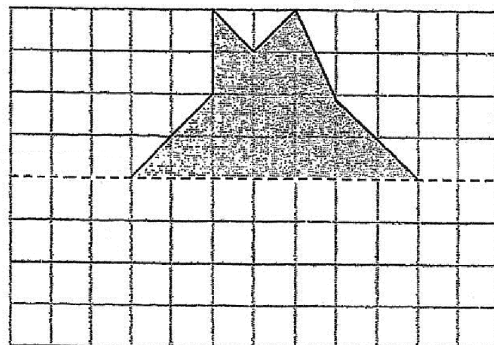
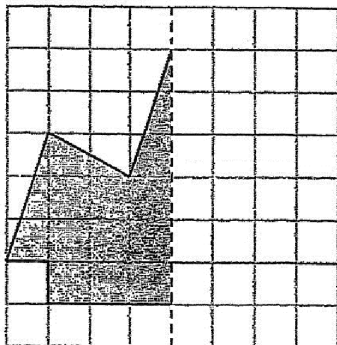
24. Write the co-ordinates for each point.

- a) Point a (_____, _____)
- b) Point b (_____, _____)
- c) Point c (_____, _____)
- d) Point d (_____, _____)

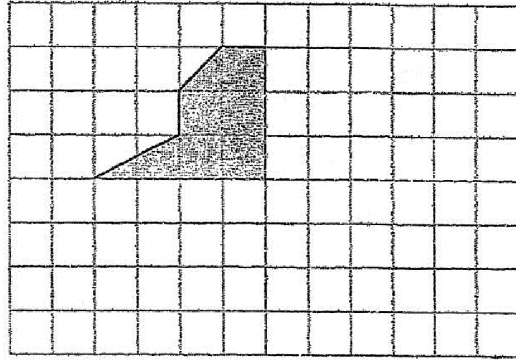


25. The dotted lines are lines of symmetry.

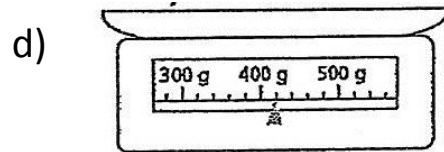
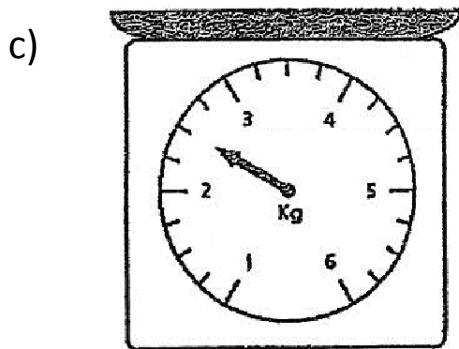
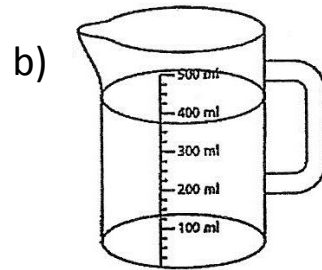
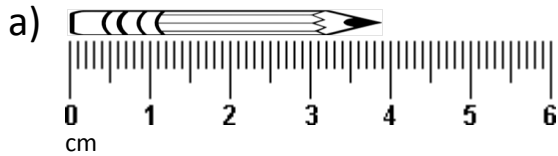
Complete each shape so that it is symmetrical.



26. This shape has two lines of symmetry. Complete the shape.

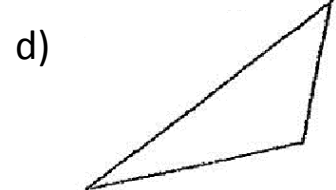
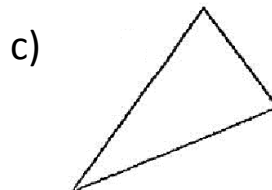
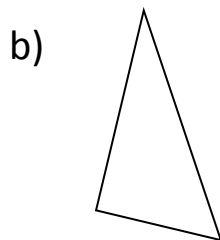
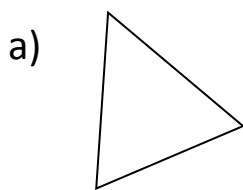


27. Look at the diagrams below and write down the given measurement from each scale.



Answer: a) _____ b) _____ c) _____ d) _____

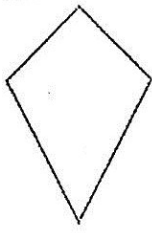
28. Name each of these triangles



Answer: a) _____ b) _____ c) _____ d) _____

29. Name each of these quadrilaterals.

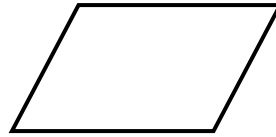
a)



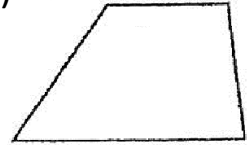
b)



c)



d)



Answer: a) _____








b) _____

c) _____

d) _____

Algebra and applications

30. Look at this pictogram and answer these questions.

Type of bird	Number of birds ( = 2 birds  = 1 bird)
Sparrow	
Blackbird	
Robin	
Blue tit	
Pigeon	

a) How many pigeons visited the bird table?

Answer: _____

b) How many sparrows visited the bird table?

Answer: _____

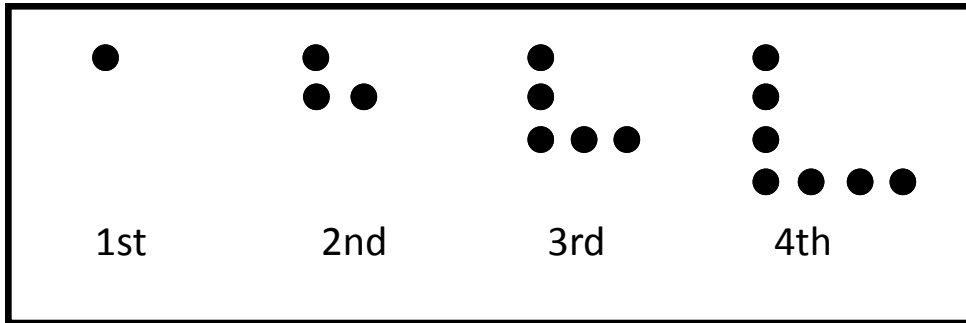
c) What type of bird visited the bird table 3 times?

Answer: _____

d) How many more sparrows than robins visited the bird table?

Answer: _____

31. Here is a pattern sequence.



a) Complete this sequence table.

Pattern number	1	2	3	4	5	6	7	8
Number of dots								

b) How many dots will there be in the 10th pattern?

Answer: _____

c) How many dots will there be in the 30th pattern?

Answer: _____

d) How many dots will there be in the n^{th} pattern?

Answer: _____

32. In a box of 12 chocolates, n have toffee centres.

Write a formula to show how many chocolates are not toffee centred.

Answer: _____

33. The price of a cinema ticket is £3. What is the price of n tickets?

Answer: _____

