

Added Value Unit

PRACTICE

B
T E S T

Part One

Time allowed: 20 minutes

You may **not** use a calculator for this part of the test.

- A packet of biscuits contains 40 biscuits. Toby eats 5% of the biscuits. How many biscuits are left in the packet?
- Sarah collected 6 pine cones. She measured the height of each cone and recorded her results.
12 cm, 17 cm, 12 cm, 18 cm, 11 cm, 10 cm
Find the mean height of a pine cone. Give your answer, in centimetres, correct to 2 decimal places.
- 35 boys applied to go on a catering course run by a hotel. $\frac{2}{7}$ of the boys went on the course. How many boys went on the catering course?
- Harold mixes 1.25 litres of water with 7.8 litres of emulsion paint. He calculated that 8.7 litres of the mixture are required to paint a wall. Has Harold mixed enough water and emulsion to paint the wall? Explain your answer.
- A geometry set costs £4.45. Find the cost of 8 geometry sets.

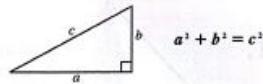
FORMULAE LIST:

Circumference of a circle: $C = \pi d$
Area of a circle: $A = \pi r^2$
Volume of a triangular prism: $V = Ah$

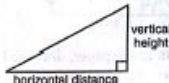
TRIGONOMETRY RATIOS IN A RIGHT-ANGLED TRIANGLE:

$\tan x^\circ = \frac{\text{opposite}}{\text{adjacent}}$
 $\sin x^\circ = \frac{\text{opposite}}{\text{hypotenuse}}$

THEOREM OF PYTHAGORAS:



GRADIENT:



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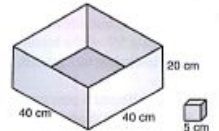
Part Two

Time allowed: 40 minutes

You may use a calculator for this part of the test.

6. Solve. (a) $3x - 10 = x$ (b) $2(x - 3) = 18$

7. How many cubes of edge 5 cm can be packed into a cuboid which has dimensions 40 cm by 40 cm by 20 cm?



8. A sequence of patterns is made using diamonds.



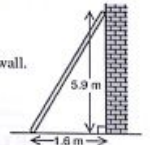
- (a) Copy and complete the table.

Pattern number (p)	1	2	3	4	5	6
Number of diamonds (d)	1	4	7			

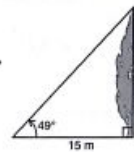
- (b) Write down a formula for calculating the number of diamonds (d) when you know the pattern number (p).
(c) How many diamonds are needed for Pattern 100?

9. A train travels 140 miles at an average speed of 80 miles per hour. Calculate how long the journey took. Give your answer in hours and minutes.

10. A ladder is placed on level ground, 1.6 m away from a vertical wall. The ladder reaches 5.9 m up the wall. Calculate the length of the ladder. Give your answer, in metres, correct to 2 decimal places.



- 11.



From a point on the ground 15 m from the base of a tree, the angle of elevation to the top of a tree is 49° . Calculate the height of the tree. Give your answer in metres, correct to one decimal place.

12. On graph paper, draw and label x and y axes from -5 to 5 .
(a) Plot the points: $P(-3, 1)$, $Q(1, 4)$ and $R(4, 0)$.
(b) $PQRS$ is a square. Plot the position of point S on your graph.