# Added Value Unit
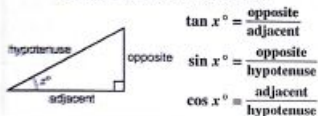
## Part One

**Time allowed:** 20 minutes

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

**1.** A pizza takeaway sells 500 pizzas a week.
80% of the pizzas have a cheese topping.
How many pizzas sold each week have a cheese topping?

**2.** Kevin got a job picking tomatoes and putting them into boxes.
Each of the 7 boxes of tomatoes he filled was weighed and the results recorded.
42 kg,  41 kg,  32 kg,  50 kg,  39 kg,  36 kg,  32 kg
Find the mean weight of a box of tomatoes.
Give your answer, in kilograms, correct to 2 decimal places.

**3.** 48 girls applied to go on a canoeing course.
$\frac{2}{3}$ of the girls went on the course.
How many girls went on the canoeing course?

**4.** A crane lifts a load 5.72 metres off the ground and stops.
The load is then lifted a further 13.8 metres higher, before being lowered by 6.47 metres.
How far is the load from the ground?

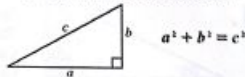**5.** A calculator costs £7.95.
Find the cost of 6 calculators.

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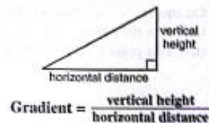Volume of a triangular prism: $V = Ah$

**THEOREM OF PYTHAGORAS:**



$a^2 + b^2 = c^2$

**TRIGONOMETRY RATIOS IN A RIGHT-ANGLED TRIANGLE:**



$\tan x° = \dfrac{\text{opposite}}{\text{adjacent}}$

$\sin x° = \dfrac{\text{opposite}}{\text{hypotenuse}}$

$\cos x° = \dfrac{\text{adjacent}}{\text{hypotenuse}}$

**GRADIENT:**



$\text{Gradient} = \dfrac{\text{vertical height}}{\text{horizontal distance}}$
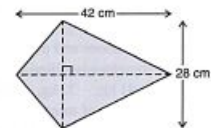
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# Added Value Unit

## Part Two

**Time allowed:** 40 minutes

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

**6.** Solve.
(a) $4x = 20 - x$
(b) $4(x + 1) = 16$

**7.** A badge is made in the shape of a kite.
Find the area of the badge.



**8.** A number sequence begins:  3,  7,  11,  15,  ...

| Term   | 1 | 2 | 3  | 4  | 5 | 6 |
|--------|---|---|----|----|---|---|
| Number | 3 | 7 | 11 | 15 |   |   |

(a) Write down the next two numbers in this sequence.
(b) Write down a formula that can be used to find any term in the sequence.
(c) Use your formula to find the 12th term in the sequence.

**9.** A lorry travels 100 miles in 2 hours 30 minutes.
Find its average speed in miles per hour.

**10.** A helicopter flies 7 km east from its base.
It then heads north for 10 km, followed by east for 8 km.
Calculate the direct distance from the helicopter to the base.
Give your answer in kilometres, correct to one decimal place.



**11.**
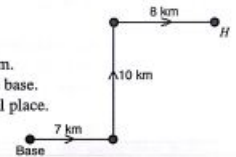


Jason is standing 12 m from a haystack.
The angle of elevation to the top of the haystack is 25°.
Calculate $h$, the height of the haystack.
Give your answer in metres, correct to one decimal place.
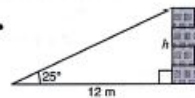
**12.** On squared paper, draw and label   the $x$ axis from $-4$ to 6   and   the $y$ axis from $-4$ to 3.
(a) Plot the points:  $A(-4, -4)$,  $B(-2, 2)$  and  $D(4, -4)$.
(b) Plot point $C$ so that $ABCD$ is a parallelogram.