Non-calculator Questions

Edexcel

1.

Work out $700 - 7^2$

(2)

2.

Work out $\sqrt{64} \times (12 - 7)$

(1)

NCFE

3.

Jessie needs to work out how much bonus she will pay each of her workers for the last month.

She uses this formula to work out the bonus payment: $B = \frac{0.015T}{N}$

Where: B = bonus payment per worker (£)
T = total sales (£)
N = number of workers

Last month the total sales were £38 000

Jessie had 3 workers.

Work out the bonus payment each worker will get.

[3 marks]

Your answer: £

City & Guilds

4.

$(8 + 2 \times 6)^2 =$

_____

(1 mark)

5.

$900 + 1500 \div 300 =$

_____

(1 mark)

6.

$\frac{3^2}{3} - 28 =$

_____

(1 mark)

7.

$5^4 =$

_____

(1 mark)

8.

Calculate $\frac{8-4^2}{8}$ =

_____

(1 mark)

9.

$\frac{\sqrt{15-6}}{3}$ =

_____

(1 mark)

Highfield

10.

Calculate

$6^3 - 8 \div 2$

Write the answer in the box below. ***(1 mark)***

Answer: _____

11.

Calculate:

$16 + 6^2 \times 4$

Write the answer in the box below. *(1 mark)*

Answer: _____

AQA

12.

Work out $25 - 2 \times 3^2$

[2 marks]

Answer _____

13.

Circle the value of $4y^2$ when $y = -3$

[1 mark]

−144 −36 36 144

14.

Work out $61 - 4 \times 2^3$

[2 marks]

Answer _____

15.

Work out $2^3 \times (16 - 4)$

[2 marks]

Answer _____

Calculator Questions

Edexcel

1.

Here is a formula.

$$m = \frac{2.67a}{4y}$$

Find the value of m when $a = 8$ and $y = 3.5$
Give your answer correct to 3 decimal places.

(3)

NCFE

2.

Chen reads about some footprints that were preserved in volcanic ash.

The foot length was 18.8 cm and the stride length (the distance between the footprints) was 164.5 cm

Archaeologists use the formula: $R = \frac{\text{stride length}}{4 \times \text{foot length}}$

Chen uses a calculator to calculate R for the footprints found in the volcanic ash.

She enters 164.5 ÷ 4 × 18.8 and gets the answer 773.15

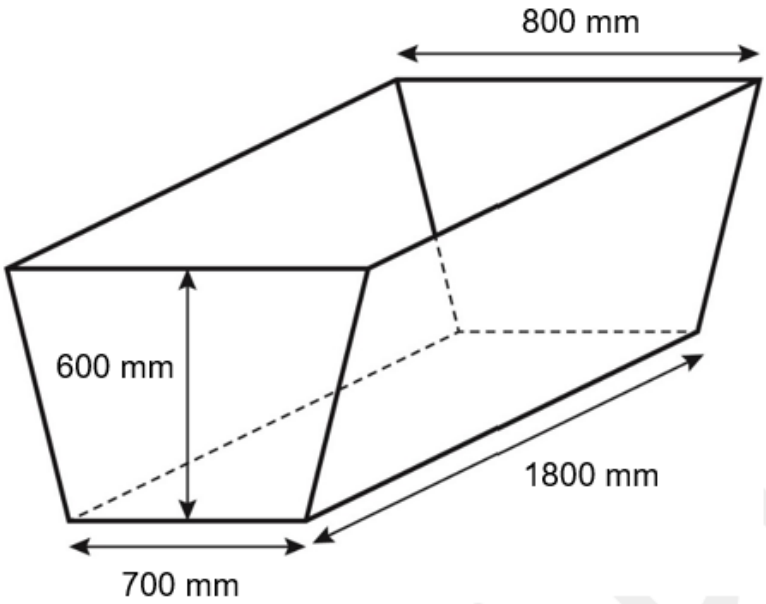
Explain what Chen has done wrong.

[1 mark]

3.

The diagram shows Kamrul's bathtub.

The bathtub is a prism with a cross section in the shape of a trapezium.



Not drawn accurately

Kamrul uses this formula to calculate the capacity of this prism:

$$C = 0.5h(a + b)L$$

Where:

C = capacity of the prism
a = width of the bottom edge of the trapezium
b = width of the top edge of the trapezium
h = height of the prism
L = length of the prism

Kamrul normally fills the bathtub with water to 78% of its capacity.

He thinks that, if he fills the bathtub to 72% of its capacity, he will save more than 40 litres of water.

Is Kamrul correct?

Show how you decide.

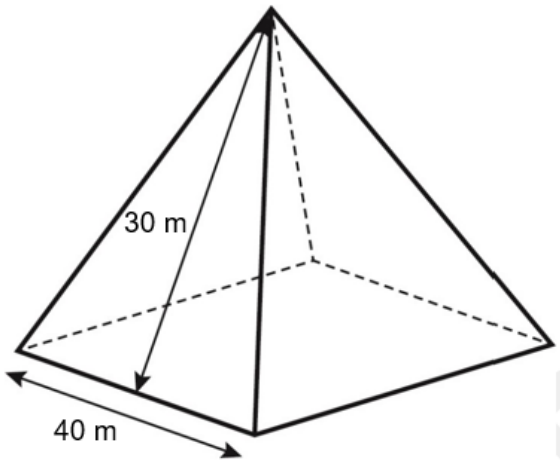
[5 marks]

Your answer:

4.

The main stage is a square-based pyramid.

Pavel needs to work out the surface area of the four triangular faces of the pyramid.



Not drawn accurately

He uses this formula: $A = 4\left(\frac{bh}{2}\right)$

Where:

A = surface area of the 4 triangular faces of the pyramid (m^2)
b = length of the base of the triangular face (m)
h = slant height of the triangular face (m)

Pavel thinks the total surface area of the 4 triangular faces of this pyramid is $1200\,m^2$

Is Pavel correct?

Show how you decide.

[2 marks]

Your answer:

5.

To work out his commission, Chris does this calculation:

$$\frac{(194500 \times 0.03) + 250}{1.25}$$

What answer should he get?

[2 marks]

Your answer:

Highfield

6.

Calculate the value of x where:

$x = 15 + 84^2 \div 3$

Write the answer in the box below. ***(1 mark)***

Answer: _____

_____

7.

Calculate the value of n where:

$$n = 342 + 88^2 \div 4$$

Write the answer in the box below. *(1 mark)*

Answer: _____

8.

Calculate the value of P

$$P = \frac{0.75 \times 0.095}{0.005}$$

Write the answer in the box below. *(1 mark)*

Answer: _____

9.

Calculate

$$(6 + 3 \times 2)^2$$

Write the answer in the box below. *(1 mark)*

Answer: _____

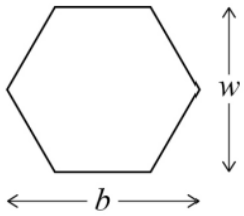
AQA

10.

Mo makes and sells jewellery.

He makes pendants in the shape of hexagons.

The hexagons are made of glass and have wire around the perimeter.



Not drawn accurately

Here is a formula for the perimeter, P, of the hexagon.

$$P = 6 \times \sqrt{\left(\frac{b}{4}\right)^2 + \left(\frac{w}{2}\right)^2}$$

b is the length of the pendant

w is the width of the pendant

Mo makes pendants with length 6.4 cm and width 5.5 cm

He buys the wire in reels with 4 metres of wire on each reel.

How many pendants can Mo make using one reel of wire?
You **must** show your working.

[5 marks]

Answer _____

11.

$x = 5$ and $y = -3.2$

Work out the value of $x + y^2$

[2 marks]

Answer _____