

Clive On Area - Answers

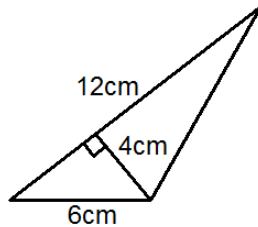
Clive is tackling his area homework and knows that he's made mistakes somewhere.

Can you spot and correct the mistakes Clive has made?

Can you explain what mistakes Clive has made, and maybe give him some tips so that he (hopefully) doesn't make them again?

Question 1:

Find the area of the triangle below:



Clive's answer:

To calculate the area of a triangle:

$$Area = \frac{1}{2}bh = \frac{1}{2} \times 12 \times 6$$

Answer:

$$36cm^2$$

Your answer:

To calculate the area of a triangle:

$$Area = \frac{1}{2}bh = \frac{1}{2} \times 12 \times 4$$

Answer:

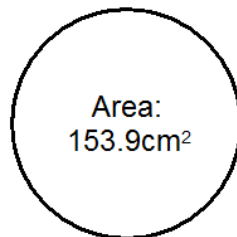
$$24cm^2$$

What mistake has Clive made?

He chose the wrong length for the height.

Question 4:

Find the diameter of the circle below:



Clive's answer:

$$A = \pi r^2$$

$$153.9 = \pi \times r^2$$

$$r^2 = \frac{153.9}{\pi} = 49$$

Answer:

$$7cm$$

Your answer:

$$A = \pi r^2$$

$$153.9 = \pi \times r^2$$

$$r^2 = \frac{153.9}{\pi} = 49$$

$$r = \sqrt{49} = 7cm$$

Answer:

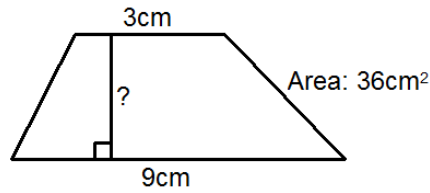
$$14cm$$

What mistake has Clive made?

He calculated the radius and not the diameter.

Question 3:

Find the height of the trapezium below:



Clive's answer:

The parallel sides add to 12cm.

$$36 \div 12$$

Answer:

3cm

Your answer:

The parallel sides add to 12cm.

$$12 \div 2 = 6$$

$$36 \div 6$$

Answer:

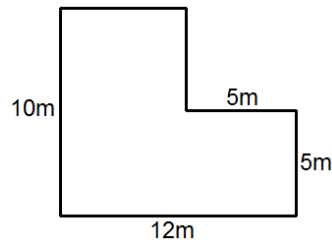
6cm

What mistake has Clive made?

He forgot to average the parallel sides.

Question 4:

The diagram below shows the plan of a playground:



It costs £7.49 per square metre to resurface the playground.

How much will it cost to resurface the whole playground?

Clive's answer:

Find the area of the playground:

$$10 \times 12 - 5 \times 7 = 85m^2$$

Cost:

$$85 \times 7.49$$

Answer:

£636.65

Your answer:

Find the area of the playground:

$$10 \times 12 - 5 \times 5 = 95m^2$$

Cost:

$$95 \times 7.49$$

Answer:

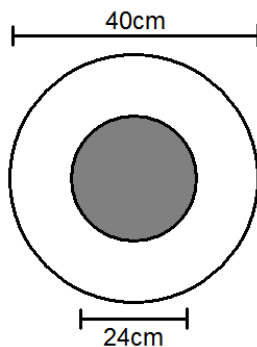
£711.55

What mistake has Clive made?

The missing part's dimensions are 5m by 5m not 5m by 7m.

Question 5:

Below is a mirror made of an outer frame of wood and the mirror in the centre:



The diameter of the mirror is 24cm .

The diameter of the whole design is 40cm .

Calculate the area of wood on show to 1dp.

Clive's answer:

The wooden frame is 8cm across.

Area of a circle: πr^2

$$\pi \times 8^2$$

Answer:

$$201.1\text{cm}^2$$

Your answer:

Find the difference between the areas of the circles:

$$\pi \times 20^2 - \pi \times 12^2$$

Answer:

$$804.2\text{cm}^2$$

What mistake has Clive made?

He needs to find the difference of the areas of the two circles rather than the difference between the radius of each circle.