

- 1 The planet Neptune is 4 496 000 000 kilometres from the Sun.
Write this distance in standard form.

$$4496000000 = 4.496 \times 10^9$$

Answer 4.496×10^9 km [1]

- 2 Write down the next prime number after 89.

Answer 97 [1]

- 3 The table gives the average surface temperature ($^{\circ}\text{C}$) on the following planets.

Planet	Earth	Mercury	Neptune	Pluto	Saturn	Uranus
Average temperature	15	350	-220	-240	-180	-200

- (a) Calculate the range of these temperatures.

$$350 - (-240) = 350 + 240 = 590$$

Answer(a) 590 $^{\circ}\text{C}$ [1]

- (b) Which planet has a temperature 20°C lower than that of Uranus?

Answer(b) Neptune [1]

- 4 Work out

$$\frac{2 \tan 30^{\circ}}{1 - (\tan 30^{\circ})^2}$$

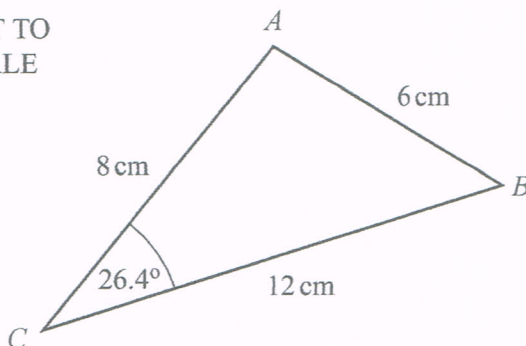
$$= 1.732050807\dots$$

$$\approx 1.73$$

Answer 1.73 [2]

- 5 In triangle ABC , $AB = 6\text{ cm}$, $AC = 8\text{ cm}$ and $BC = 12\text{ cm}$. Angle $ACB = 26.4^{\circ}$.
Calculate the area of the triangle ABC .

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$$\text{Area} = \frac{1}{2} \times AC \times BC \times \sin \angle ACB$$

$$= \frac{1}{2} \times 8 \times 12 \times \sin 26.4$$

$$= 21.342488600\dots$$

$$\approx 21.3$$

Answer 21.3 cm^2 [2]