

AQA GCSE Maths – higher

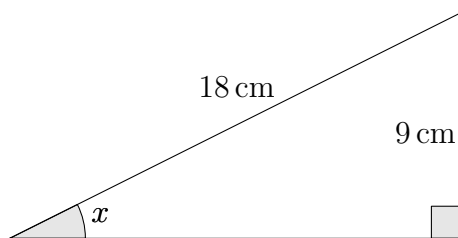
1. Circle the fraction that is equivalent to 4.75:

$$\frac{15}{4} \quad \frac{19}{4} \quad \frac{21}{4} \quad \frac{23}{4}$$

2. Which one of these is a square number **and** a cube number?

100 1000 10 000 1 000 000

3. Use trigonometry to work out the size of angle x .



4. As a decimal $\frac{11}{40} \doteq 0.275$. Work out $\frac{33}{400}$ as a decimal.

5. s and t are **positive** integers. $(x + s)(x - t)$ is expanded and simplified. The answer is $x^2 + kx - 40$ where k is a positive integer. Work out the **smallest** possible value of k .

6. Work out $\sqrt[3]{\frac{2^7 \times 11^3}{2}}$. Give your answer as an integer.

7. Work out $2\sqrt{10} \times \sqrt{80} \times \sqrt{18}$. Give your answer as an integer.

8. Work out $32^{-\frac{3}{5}}$. Give your answer as a decimal.

9. Factorise fully $144 - 4x^2$.

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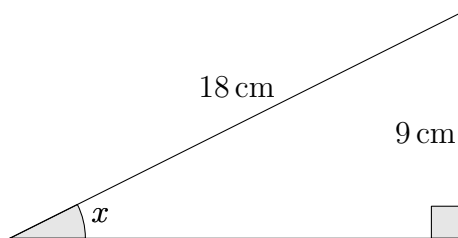
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Solutions

1. Circle the fraction that is equivalent to 4.75:

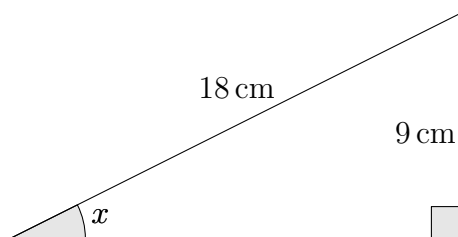
$$\frac{19}{4}$$

2. Which one of these is a square number **and** a cube number?

1 000 000

3. Use trigonometry to work out the size of angle x .

$$x = 60^\circ$$



4. As a decimal $\frac{11}{40} \doteq 0.275$. Work out $\frac{33}{400}$ as a decimal.

$$\frac{33}{400} \doteq 0.0825$$

5. s and t are **positive** integers. $(x + s)(x - t)$ is expanded and simplified. The answer is $x^2 + kx - 40$ where k is a positive integer. Work out the **smallest** possible value of k .

$$k = 3$$

6. Work out $\sqrt[3]{\frac{2^7 \times 11^3}{2}}$. Give your answer as an integer.

44

7. Work out $2\sqrt{10} \times \sqrt{80} \times \sqrt{18}$. Give your answer as an integer.

240

8. Work out $32^{-\frac{3}{5}}$. Give your answer as a decimal.

0.125

9. Factorise fully $144 - 4x^2$.

$$4(6 - x)(6 + x)$$