

SURDS. Rationalising denominators, adding and subtracting. Simplifying.
 Usually a simple “skills” question in Credit, but could be incorporated into
 Pythagoras, distance formula, quadratic formula. Any question that may
 require the use of roots.

10. Simplify

$$\frac{\sqrt{3}}{\sqrt{24}}$$

Express your answer as a fraction with a rational denominator.

3	

10. Simplify

$$\sqrt{27} + 2\sqrt{3}$$

2	

11. Express in its simplest form

$$y^8 \times (y^3)^{-2}$$

2	

12. (a) Evaluate

$$8^{\frac{2}{3}}$$

(b) Simplify

$$\frac{\sqrt{24}}{\sqrt{2}}$$

2	
2	

11. (a) Simplify $2\sqrt{75}$.

(b) Evaluate $2^0 + 3^{-1}$.

2	
2	

11. $f(x) = 4\sqrt{x} + \sqrt{2}$

(a) Find the value of $f(72)$ as a surd in its simplest form.

(b) Find the value of t , given that $f(t) = 3\sqrt{2}$.

3	
	3

(b) Expand

$$m^{\frac{1}{2}}(2 + m^2).$$

2

(c) Simplify, leaving your answer as a surd

$$2\sqrt{20} - 3\sqrt{5}.$$

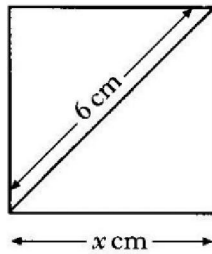
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7. Remove brackets and simplify

$$a^{\frac{1}{2}}(a^{\frac{1}{2}} - 2).$$

2

9. A square of side x centimetres has a diagonal 6 centimetres long.



Calculate the value of x , giving your answer as a surd in its simplest form.

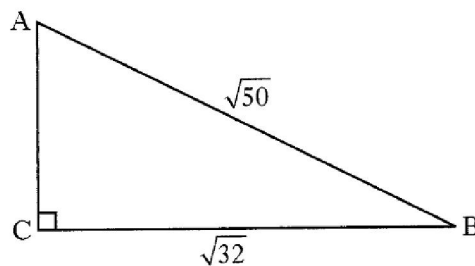
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9. Simplify

$$m^3 \times \sqrt{m}.$$

2

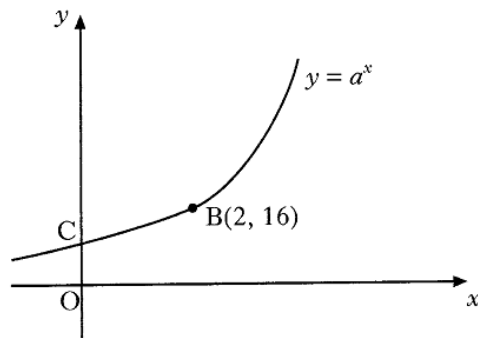
11. A right angled triangle has dimensions as shown.



Calculate the length of AC, leaving your answer as a surd **in its simplest form**.

3

10. Part of the graph of $y = a^x$, where $a > 0$, is shown below.



The graph cuts the y -axis at C.

- (a) Write down the coordinates of C.

1

B is the point (2, 16).

- (b) Calculate the value of a .

2