

K Education Centre

GCSE Maths - Higher

Surds

Assignment Questions

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Surds:

Q1 : Write down the following in the form of 5^n

a) 125 b) $\frac{1}{625}$

Q2: Evaluate :

a) $\left(\frac{8}{512}\right)^{1/3}$ b) $64^{\frac{-5}{6}}$ c) $27^{-1/3}$

Q3: Solve the equation

$$x^{-\frac{2}{3}} = 3x^{-1}$$

Q4: Simplify each expression and leave your answers in surd form if necessary.

a) $4\sqrt{7} \times 2\sqrt{3} \div 8\sqrt{3}$ b) $9\sqrt{28} \div 3\sqrt{7}$

c) $a\sqrt{b} \times c\sqrt{b} \div a\sqrt{b}$ d) $12\sqrt{3} \times 4\sqrt{3} \div 2\sqrt{3}$

Q5: Find the value of a that make each equation true.

a) $\sqrt{5} \times \sqrt{a} = 10$

b) $2\sqrt{6} \times 3\sqrt{a} = 72$

Q6: Calculate the area of square with side

$4 + \sqrt{3}$ cm.

Q7: Expand and simplify :

a) $(2 - 3\sqrt{5})(2 + 3\sqrt{5})$ b) $(1 - \sqrt{3})^2$

Q8: Rationalise the following :

a) $\frac{6+5\sqrt{3}}{\sqrt{3}}$ b) $\frac{2\sqrt{3}}{\sqrt{8}}$ c) $\frac{2-\sqrt{3}}{\sqrt{3}}$

Q9: Find the values of a and b such that the statement is true.

$$(4+\sqrt{5})(3-\sqrt{5}) = a+b\sqrt{5}$$

Q10: Show that the triangle is a right – angled. All lengths are in centimeters.

