

Quiz 2

Simplify

1. $7(\sqrt{2}+1) - \sqrt{2}(5-\sqrt{2})$

2. $\sqrt[3]{3} + \sqrt[3]{81}$

3. $(2xy^2)^{-1} \times (4xy)^2$

1. $7\sqrt{2}+7 - 5\sqrt{2}+2 = 9+2\sqrt{2}$ [2]

2. $\sqrt[3]{3} + \sqrt[3]{27 \times 3} = \sqrt[3]{3} + 3\sqrt[3]{3}$ [1]

$= 4\sqrt[3]{3}$ [1]

3. $\frac{4^2 x^2 y^2}{2xy^2}$ [2]

$= 8x$ [1]

Rationalise the denominator

4. $\frac{3\sqrt{2}}{\sqrt{12}}$

5. $\frac{2\sqrt{2}}{\sqrt{6}-\sqrt{2}}$

4. $\frac{3\sqrt{2}}{\sqrt{12}} \times \frac{\sqrt{3}}{\sqrt{3}}$ [1]

$= \frac{3\sqrt{6}}{6}$ [1]

$= \frac{1}{2}\sqrt{6}$ [1]

Solve

6. $4^{2x} \times 8^{x-1} = 32$

5. $\frac{2\sqrt{2}}{\sqrt{6}-\sqrt{2}} \times \frac{\sqrt{6}+\sqrt{2}}{\sqrt{6}+\sqrt{2}}$ [1]

$= \frac{2\sqrt{2}(\sqrt{6}+\sqrt{2})}{6-2} = \frac{2\sqrt{2}(\sqrt{6}+\sqrt{2})}{4} = \frac{\sqrt{12}+2}{2}$ [1]

$= \frac{2(\sqrt{3}+1)}{2}$

$= \sqrt{3}+1$ [1]

6. $2^{4x} \times 2^{3(x-1)} = 2^5$ [1]

$2^{4x+3x-3} = 2^5$

$7x-3=5$ [1]

$7x=8$

$x = \frac{8}{7}$ [1]