

Key

Warm Up: Quiz Review

1. Simplify $\frac{50c^2d^2}{5cd^5}$

$10cd^{-3}$
 $\frac{10c}{d^3}$

2. Simplify $(2x^3y^4)^5(4xy^2)$

$2^5x^{15}y^{20} \cdot 4xy^2$
 $32x^{15}y^{20} \cdot 4xy^2$
 $128x^{16}y^{22}$

3. Multiply $\sqrt[3]{x} \cdot \sqrt[4]{x}$

$x^{1/3} \cdot x^{1/4}$
 $x^{(1/3+1/4)} = x^{7/12}$

4. Simplify $\left(\frac{\sqrt[3]{x^2}}{\sqrt{y}}\right)^{-6}$
 $\left(\frac{x^{2/3}}{y^{1/2}}\right)^{-6} = \frac{x^{-4}}{y^{-3}} = \frac{y^3}{x^4}$

5. Simplify $(81x^{12}y^{28})^{1/4}$

$81^{1/4} x^3 y^7$
 $(3^4)^{1/4} x^3 y^7$
 $3x^3y^7$

6. Rewrite in radical form

$(2x)^{7/8}$ $\left(\sqrt[8]{2x}\right)^7$ or $\sqrt[8]{(2x)^7}$ or $\sqrt[8]{128x^7}$

7. Rewrite in exponential form

$\sqrt[3]{y^2} = y^{2/3}$
 $(y^2)^{1/3} = y^{2/3}$

8. Simplify $(\sqrt{x} \cdot \sqrt[3]{y^2})^{-6}$
 $(x^{1/2} \cdot y^{2/3})^{-6} = \frac{1}{x^3 y^4}$

9. Solve $3 + \sqrt[3]{x-4} = 6$

$\sqrt[3]{x-4} = 3$
 $(x-4)^{1/3} = 3$
 $x-4 = 3^3 = 27$
 $x = 31$

check
 $3 + \sqrt[3]{31-4} = 6$
 $3 + \sqrt[3]{27} = 6$
 $3 + 3 = 6$
 $6 = 6 \checkmark$

10. Solve $(7x+8)^{1/2} - 2 = x$

$x=4 \rightarrow (28+8)^{1/2} - 2 = 4$
 $(36)^{1/2} - 2 = 4$
 $6 - 2 = 4$
 $4 = 4 \checkmark$
 $x=-1 \rightarrow (7(-1)+8)^{1/2} - 2 = -1$
 $(1)^{1/2} - 2 = -1$
 $1 - 2 = -1$

$(7x+8)^{1/2} = x+2$
 $7x+8 = (x+2)^2$
 $7x+8 = x^2+4x+4$
 $0 = x^2-3x-4$
 $(x-4)(x+1)$
 $x=4$ $x=-1$