

Math 92
Quiz 3
(Multiplying Radical Expressions-7.3)

1) Multiply:

$$\begin{aligned}(\sqrt{y-b})(\sqrt{y+b}) &= \sqrt{(y-b)(y+b)} \\ &= \sqrt{y^2 - b^2}\end{aligned}$$

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2) Simplify by factoring:

$$\begin{aligned}\sqrt{325} \\ &= \sqrt{25 \cdot 13} \\ &= 5\sqrt{13}\end{aligned}$$

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3) Simplify. Assume no radicands were formed by raising negative numbers to even powers.

$$\begin{aligned} \sqrt[3]{a^6 b^7 c^{13}} &= \sqrt[3]{a^6 \cdot b^6 \cdot b \cdot c^{12} \cdot c} \\ &= a^{6/3} \cdot b^{6/3} \cdot b^{1/3} \cdot c^{12/3} \cdot c^{1/3} \\ &= a^2 \cdot b^2 \cdot b^{1/3} \cdot c^4 \cdot c^{1/3} \\ &= a^2 b^2 c^4 \sqrt[3]{bc} \end{aligned}$$

$a^6 = a^6$
 $b^7 = b^6 \cdot b$
 $c^{13} = c^{12} \cdot c$

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4) Multiply and Simplify:

$$\begin{aligned} (\sqrt{6})(\sqrt{3}) &= \sqrt{3} \cdot 2 \cdot \sqrt{3} \\ &= \sqrt{3^2} \cdot 2 \\ &= \sqrt{3^2} \cdot \sqrt{2} \\ &= 3\sqrt{2} \end{aligned}$$

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