

Warm - Up

3/22/19

Simplify (no calculator)

$$\left(\frac{-\sqrt{8}}{2}\right)^2 = \frac{(-1)^2 \times (\sqrt{8})^2}{(2)^2}$$

$$\frac{1 \times 8}{4} = \frac{2}{2} = 1$$

(Note: The handwritten work shows a circled 2 with an arrow pointing to the denominator of the next fraction, and a large curved line connecting the two equations.)

P.12

3/22

A Product Property for Square Roots

Property – Product Property for Square Roots

If all factors of a **radicand** are non-negative (either 0 or positive) then the square root of a product is the product of the square roots of the factors.

Example: $\sqrt{4 \times 2} = \sqrt{4} \times \sqrt{2} = 2\sqrt{2}$

$$\sqrt{12} = \sqrt{2 \cdot 2 \cdot 3}$$

Simplify

$$\sqrt{12}$$

$$\sqrt{12}$$

$$\sqrt{4 \times 3}$$

$$\sqrt{2 \times 6}$$

$$\sqrt{4} \times \sqrt{3}$$

$$\sqrt{2} \times \sqrt{6}$$

$$2 \times \sqrt{3}$$

$$2\sqrt{3}$$

$$\sqrt{2} \cdot \sqrt{2} \cdot 3$$

$$\sqrt{2} \cdot \sqrt{2} \cdot \sqrt{3}$$

$$\sqrt{2} \cdot \sqrt{3}$$

$$2\sqrt{3}$$

Simplify

$$\sqrt{18}$$

$$\sqrt{3 \cdot 3 \cdot 2}$$

$$\sqrt{9 \times 2}$$

$$\sqrt{9} \sqrt{2}$$

$$3\sqrt{2}$$



Simplify

$$\sqrt{75}$$

$$\begin{array}{l} \sqrt{75} \\ \hline \sqrt{3 \cdot 5 \cdot 5} \\ \hline \sqrt{25 \cdot 3} \end{array}$$

$$\begin{array}{l} \sqrt{25} \cdot \sqrt{3} \\ 5\sqrt{3} \end{array}$$

$$\rightarrow \sqrt{5^2} \cdot \sqrt{3}$$

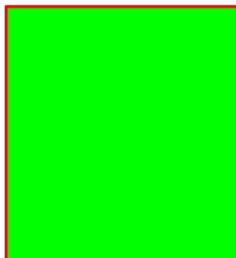
Simplify

$$\sqrt{32}$$

$$\sqrt{16 \times 2}$$

$$\sqrt{16} \sqrt{2}$$

$$4\sqrt{2}$$



$$\sqrt{32}$$

$$\sqrt{4 \times 8}$$

$$\sqrt{4} \sqrt{8}$$

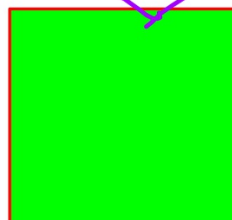
$$2\sqrt{8}$$

$$2\sqrt{4 \times 2}$$

$$2\sqrt{4} \sqrt{2}$$

$$2(2)\sqrt{2}$$

$$4\sqrt{2}$$



$$\begin{aligned} \sqrt{32} &= \sqrt{2 \cdot 2 \cdot 2 \cdot 2 \cdot 2} \\ &= \sqrt{2^2 \cdot 2^2 \cdot 2} \\ &= \sqrt{4 \cdot 4 \cdot 2} \\ &= \sqrt{2^2} \cdot \sqrt{2^2} \cdot \sqrt{2} \\ &= 2 \cdot 2 \cdot \sqrt{2} \\ &= 4\sqrt{2} \end{aligned}$$

Simplify

$$\begin{aligned} &5\sqrt{18} \\ &5 \cdot \sqrt{9} \cdot \sqrt{2} \\ &5 \cdot 3\sqrt{2} \\ &15\sqrt{2} \end{aligned}$$

Simplify

$$-3\sqrt{20}$$

$$-3\sqrt{4 \times 5}$$

$$-3\sqrt{4}\sqrt{5}$$

$$-3(2)\sqrt{5}$$

$$-6\sqrt{5}$$



Homework (due Tuesday)

p.109 (27 - 32)

p. 112 (1 - 9) *2 sections