KEY

L05 – Worksheet

Part 1: Math 20-2 Worksheet

Pg 198 #2a: Write $\frac{1}{\sqrt{5}}$ in its rationalized form.

$\frac{1}{\sqrt{5}} \cdot \frac{\sqrt{5}}{\sqrt{5}} = \frac{\sqrt{5}}{5}$

Pg 198 #13acd: Rationalize the denominator in each expression.

$\frac{\sqrt{7}}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{14}}{2}$

$\frac{-3\sqrt{8}}{\sqrt{6}} \cdot \frac{\sqrt{6}}{\sqrt{6}} = \frac{-3\sqrt{48}}{6}$

$= \frac{-3 \cdot 4\sqrt{3}}{6} = \frac{-12\sqrt{3}}{6} = -2\sqrt{3}$

$\frac{\sqrt{72}}{2\sqrt{8}} = \frac{1}{2}\sqrt{\frac{72}{8}}$

$= \frac{1}{2} \cdot \sqrt{9}$

$= \frac{3}{2}$

Pg 198 #14acd: Write each expression in simplest form.

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

$\frac{-3\sqrt{30}}{\sqrt{6}} = -3\sqrt{\frac{30}{6}}$

$= -3\sqrt{5}$

$\frac{-2\sqrt{98}}{\sqrt{8}} = -2\sqrt{\frac{98}{8}} = -2\sqrt{\frac{49}{4}}$

$= \frac{-2\sqrt{49}}{\sqrt{4}} = \frac{-2(7)}{(2)}$

$= -7$

Math 20-2

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Pg 198 #16acd: Write each expression in simplest form by rationalizing the denominator.

$\frac{5\sqrt{10}}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{5\sqrt{30}}{3}$

$\frac{(\sqrt{6}+\sqrt{2})}{\sqrt{6}} \cdot \frac{\sqrt{6}}{\sqrt{6}} = \frac{6+\sqrt{12}}{6}$

$= \frac{6+2\sqrt{3}}{6} = \frac{3+\sqrt{3}}{3}$

$\frac{(\sqrt{80}+2\sqrt{3})}{3\sqrt{5}} \cdot \frac{\sqrt{5}}{\sqrt{5}} = \frac{\sqrt{400}+2\sqrt{15}}{3(5)}$

$= \frac{20+2\sqrt{15}}{15}$

Pg 200 #21b: Simplify $\frac{3\sqrt{8}}{\sqrt{6}} * \frac{\sqrt{24}}{\sqrt{2}}$. Show your work.

$\frac{3\sqrt{2\cdot2\cdot2}}{\sqrt{2\cdot3}} \cdot \frac{\sqrt{2\cdot2\cdot2\cdot3}}{\sqrt{2}} = \frac{3\sqrt{2\cdot2\cdot2\cdot2\cdot2\cdot3}}{\sqrt{2\cdot2\cdot3}} = 3\sqrt{2\cdot2\cdot2\cdot2} = 3\sqrt{2^2\cdot2^2}$

$= 3\cdot2\cdot2 = 12$

Pg 203 #11acd: Simplify. Express your answer in simplest form.

$\frac{2\sqrt{10}}{\sqrt{5}} \cdot \frac{\sqrt{5}}{\sqrt{5}} = \frac{2\sqrt{50}}{5}$

$= \frac{2\cdot5\sqrt{2}}{5} = 2\sqrt{2}$

$\frac{-13\sqrt{12}}{26\sqrt{6}} = \frac{-13}{26}\sqrt{\frac{12}{6}}$

$= -\frac{1}{2}\sqrt{2} = -\frac{\sqrt{2}}{2}$

$\frac{28\sqrt{10}}{2\sqrt{2}} = \frac{28}{2}\sqrt{\frac{10}{2}}$

$= 14\sqrt{5}$

KEY

Part 2: Math 20-1 Worksheet

Pg 290 #10ac: Rationalize each denominator. Simplify.

$$\frac{5}{(2-\sqrt{3})}\cdot\frac{(2+\sqrt{3})}{(2+\sqrt{3})} = \frac{10+5\sqrt{3}}{4+2\sqrt{3}-2\sqrt{3}-(3)}$$

$$= \frac{10+5\sqrt{3}}{1}$$

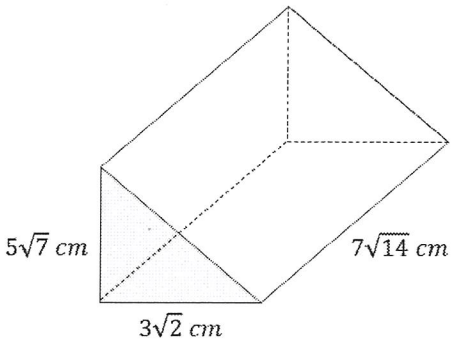
$$= 10+5\sqrt{3}$$

$$\left(\frac{-\sqrt{7}}{\sqrt{5}-2\sqrt{2}}\right)\cdot\frac{(\sqrt{5}+2\sqrt{2})}{(\sqrt{5}+2\sqrt{2})} = \frac{-\sqrt{35}-2\sqrt{14}}{(5)+2\sqrt{10}-2\sqrt{10}-4(}$$

$$= \frac{-\sqrt{35}-2\sqrt{14}}{-3} = \frac{-1(\sqrt{35}+2\sqrt{14})}{-1(3)}$$

$$= \frac{\sqrt{35}+2\sqrt{14}}{3}$$

Pg 290 #21: What is the volume of the right triangular prism?



Area of base $= \frac{1}{2}bh$

$= \frac{1}{2}(5\sqrt{7})(3\sqrt{2})$

$= \frac{1}{2}(15\sqrt{14})$

$= \frac{15}{2}\sqrt{14}$

Vol = Base × Height

$= \left(\frac{15}{2}\sqrt{14}\right)(7\sqrt{14})$

$= \frac{105}{2}(14)$

$= 735$