



Feb 11

Feb. 12 - bell ringer
Simplify.

$$1) \sqrt{320m^7n^3}$$

$$= 8m^3n\sqrt{5mn}$$

$$\sqrt{64 \cdot 5m^4 \cdot n \cdot n^2 \cdot n}$$

q.3

$$2) \sqrt{3}(\sqrt{5} + \sqrt{27})$$

$$\sqrt{3}(\sqrt{5} + 3\sqrt{3})$$

$$2\sqrt{15} + 9$$

Section 10-2, part 2

Learning target:

You can simplify radical expressions that involve division. You will rationalize the denominator.

Simplify

$$1) \frac{\sqrt{48}}{\sqrt{3}} = \sqrt{\frac{48}{3}} = \sqrt{16} = 4$$

$$2) \frac{\sqrt{7}}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{\sqrt{21}}{3}$$

$$3) \frac{\sqrt{32}}{\sqrt{3}} = \frac{4\sqrt{2}}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}}$$

$$= \boxed{\frac{4\sqrt{6}}{3}}$$

$$4) \sqrt{\frac{25}{18}} = \frac{\sqrt{25}}{\sqrt{18}} = \frac{5}{3\sqrt{2}}$$

$$= \frac{5}{3\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \boxed{\frac{5\sqrt{2}}{6}}$$

$$5) \boxed{(8+\sqrt{2})(8-\sqrt{2})} \rightarrow 62$$

$$\underline{64 - 8\sqrt{2} + 8\sqrt{2} - 2}$$

$$6) \boxed{(3-\sqrt{5})(3+\sqrt{5})} = 4$$

$$9-5$$

Conjugates

Simplify. (rationalize the denominator)

$$1) \frac{1}{(4-\sqrt{2})} \cdot \frac{4+\sqrt{2}}{4+\sqrt{2}} = \frac{4+\sqrt{2}}{16-2}$$
$$= \boxed{\frac{4+\sqrt{2}}{14}}$$

$$2) \frac{3\sqrt{5}}{(2\sqrt{5}-3\sqrt{6})} \cdot \frac{2\sqrt{5}+3\sqrt{6}}{2\sqrt{5}+3\sqrt{6}}$$

$$\frac{30+9\sqrt{30}}{20-54} = \frac{30+9\sqrt{30}}{-34}$$

$$= \boxed{\frac{-30-9\sqrt{30}}{34}}$$

$$3) \quad \frac{-9\sqrt{2}}{-4 + \sqrt{8}}$$

$$= \frac{-9\sqrt{2}}{(-4+2\sqrt{2})(-4-2\sqrt{2})} \cdot \frac{(-4-2\sqrt{2})}{(-4-2\sqrt{2})}$$

$$= \frac{36\sqrt{2} + 36}{16 - 8} = \frac{36\sqrt{2} + 36}{8}$$

$$= \boxed{\frac{9\sqrt{2} + 9}{2}}$$

$$4) \quad \frac{5+3\sqrt{2}}{4-6\sqrt{2}}$$

$$\frac{(5+3\sqrt{2})(4+6\sqrt{2})}{(4-6\sqrt{2})(4+6\sqrt{2})}$$

$$20 + 30\sqrt{2} + 12\sqrt{2} + 36$$

20 + 30\sqrt{2} / 16 - 72

$$\frac{56 + 42\sqrt{2}}{-56} = \frac{8 - 6\sqrt{2}}{8}$$

$$= \boxed{\frac{-4 - 3\sqrt{2}}{4}}$$

5) $\sqrt{\frac{2}{3}} \cdot \sqrt{\frac{5}{2}}$

$$\sqrt{\frac{2}{3} \cdot \frac{5}{2}} = \sqrt{\frac{5}{3}} = \frac{\sqrt{5}}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}}$$

$$= \boxed{\frac{\sqrt{15}}{3}}$$

Assignment

WS 10-2, Part 2

21-57 odd, omit #51

$$\frac{\sqrt{3a^3 b^4}}{\sqrt{8a^6 b}}$$