

Radicals Review, Notes

We know that a square root “undoes” a square, so $\sqrt{x^2} = \underline{\hspace{2cm}}$ and $\sqrt{36} = \underline{\hspace{2cm}}$.

Simplifying Square Roots:

For any numbers a and b where $a \geq 0$ and $b \geq 0$, $\sqrt{ab} = \sqrt{a} \cdot \sqrt{b}$.

$$1) \sqrt{147} \qquad 2) \sqrt{112} \qquad 3) -\sqrt{6} \times \sqrt{10} \qquad 4) \sqrt{8} \cdot 3\sqrt{3}$$

$$= \sqrt{49 \cdot 3}$$

$$= \sqrt{49} \cdot \sqrt{3}$$

$$= 7\sqrt{3}$$

For any numbers a and b where $a \geq 0$ and $b \geq 0$, $\sqrt{\frac{a}{b}} = \frac{\sqrt{a}}{\sqrt{b}}$ and $\frac{\sqrt{a}}{\sqrt{b}} = \sqrt{\frac{a}{b}}$.

$$5) \sqrt{\frac{108}{3}} \qquad 6) \sqrt{\frac{50}{5}} \qquad 7) \sqrt{\frac{49}{100}} \qquad 8) \sqrt{\frac{98}{2}}$$

$$= \sqrt{36}$$

$$= 6$$

Rationalize the Denominator:

$$9) \frac{2}{\sqrt{3}} \qquad 10) \frac{2\sqrt{7}}{\sqrt{2}} \qquad 11) \frac{\sqrt{13}}{\sqrt{3}} \qquad 12) \frac{5}{\sqrt{12}}$$

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

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

Radicals Review, Day 1 Homework*Simplify the radical expressions below.*

1) $\sqrt{9}$

2) $\sqrt{196}$

3) $-\sqrt{64}$

4) $-\sqrt{9}$

5) $\sqrt{48}$

6) $\sqrt{50}$

7) $\sqrt{300}$

8) $\sqrt{128}$

9) $2 \cdot \sqrt{5}$

10) $\sqrt{3} \cdot \sqrt{5}$

11) $\sqrt{4} \cdot \sqrt{4}$

12) $9 \times 2\sqrt{7}$

13) $2\sqrt{2} \cdot \sqrt{2}$

14) $6\sqrt{8} \cdot 3\sqrt{3}$

15) $4\sqrt{18}$

16) $\frac{\sqrt{20}}{2}$

17) $\frac{\sqrt{72}}{2}$

18) $\sqrt{\frac{1}{9}}$

19) $\sqrt{\frac{5}{9}}$

20) $\sqrt{\frac{12}{25}}$

Radicals Review, Day 2 Homework*Simplify the radical expressions below.*

21) $\sqrt{\frac{175}{36}}$

23) $\sqrt{\frac{27}{4}}$

22) $2\sqrt{11} \times 3\sqrt{11}$

24) $\sqrt{\frac{17}{36}}$

Rationalize the denominator for each of the radical expressions below.

25) $\frac{20}{\sqrt{5}}$

33) $\frac{7\sqrt{5}}{\sqrt{14}}$

26) $\frac{3}{\sqrt{2}}$

34) $\frac{-14\sqrt{7}}{\sqrt{4}}$

27) $\frac{16}{\sqrt{12}}$

35) $\frac{36\sqrt{12}}{\sqrt{3}}$

28) $\frac{5\sqrt{3}}{\sqrt{15}}$

36) $\frac{5}{\sqrt{2}}$

29) $\frac{1}{\sqrt{3}}$

37) $\frac{2}{\sqrt{3}}$

30) $\frac{-15}{\sqrt{5}}$

38) $\frac{2}{\sqrt{2}}$

31) $\frac{\sqrt{8}}{\sqrt{12}}$

39) $\frac{10}{\sqrt{5}}$

32) $\sqrt{\frac{13}{40}}$

40) $\frac{9}{\sqrt{3}}$