Name Mr. Ward Date _____ Class _____

LESSON 11-6

Practice B

Radical Expressions

Simplify each expression.

1. $\sqrt{225} =$ 15

2. $\sqrt{\frac{75}{3}} = \sqrt{\boxed{25}} =$ 5

$= \sqrt{49 + 576} = \sqrt{625}$

3. $\sqrt{7^2 + 24^2} =$ 25

4. $\sqrt{(x+8)^2} = |(x+8)|$

5. $\sqrt{\frac{4}{100}} =$ 2/10 or 1/5

6. $\sqrt{x^2 + 8x + 16} =$ $(x+4)$

$\sqrt{(x+4)^2}$

Simplify. All variables represent nonnegative numbers.

7. $\sqrt{32}$ $\sqrt{16 \cdot 2}$ $4\sqrt{2}$

8. $\sqrt{28}$ $\sqrt{4 \cdot 7}$ $2\sqrt{7}$

9. $\sqrt{x^4y^3}$ $x^2y\sqrt{y}$

10. $\sqrt{147}$ $\sqrt{49 \cdot 3}$ $7\sqrt{3}$

11. $\sqrt{45}$ $\sqrt{9 \cdot 5}$ $3\sqrt{5}$

12. $\sqrt{36x^4y^5}$ $6x^2y^2\sqrt{y}$

13. $\sqrt{\frac{7}{25}}$ $\frac{\sqrt{7}}{5}$

14. $\sqrt{\frac{3b^2}{27b^4}}$ $\sqrt{\frac{1}{9b^2}}$ $\frac{1}{3b}$

15. $\sqrt{\frac{m^3}{121n^4}}$ $\frac{m\sqrt{m}}{11n^2}$

16. $\sqrt{\frac{10b^4}{2b^3}}$ $\sqrt{\frac{5b}{1}}$ $\sqrt{5b}$

17. $\sqrt{\frac{9y^6}{36y^2}}$ $\sqrt{\frac{y^4}{4}}$ $\frac{y^2}{2}$

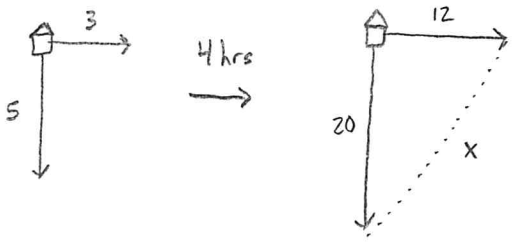
18. $\sqrt{\frac{40m^3}{10n^4}}$ $\sqrt{\frac{4m^3}{n^4}}$ $\frac{2m\sqrt{m}}{n^2}$

19. $\sqrt{\frac{128}{25}}$ $\sqrt{\frac{64 \cdot 2}{25}}$ $\frac{8\sqrt{2}}{5}$

20. $\sqrt{\frac{4}{81x^8}}$ $\frac{2}{9x^4}$

21. $\sqrt{\frac{250q^{10}}{5q^4}}$ $\sqrt{\frac{50q^6}{1}}$ $\sqrt{\frac{25 \cdot 2 \cdot q^6}{1}}$ $5q^3\sqrt{2}$

22. Two hikers leave a ranger station at noon. Tom heads due south at 5 mi/h and Kyle heads due east at 3 mi/h. How far apart are the hikers at 4 PM? Give your answer as a radical expression in simplest form. Then estimate the distance to the nearest tenth of a mile.



$12^2 + 20^2 = x^2$

$144 + 400 = x^2$

$544 = x^2$

$\boxed{x = 23.3 \text{ miles}}$

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