

Name: _____

Per: _____

Ch 6 REVIEW

The bolded questions are a priority and should be attempted first. Use separate paper to show work and write your answers on this ART.

The following is a list of the bolded questions.

T6-4: 2, 5, 7, 8, 14, 16, 19, 22, 24

T6-5: 3, 5, 9, 13, 14

T6-6: 1, 4, 7, 10, 11

The rest of the questions are for your review at home.

Notes/Questions

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T 6-4: I can simplify radical expressions by multiplying and dividing.

Simplify each expression and box your answer.

1. $\sqrt[5]{\frac{-1024}{243}}$

2. $\sqrt[5]{243x^{10}}$

3. $\sqrt{14a^2}$

4. $\sqrt{-(14a)^2}$

5. $\sqrt{49m^2t^8}$

6. $\sqrt{\frac{16m^2}{25}}$

7. $\sqrt[3]{-64r^2w^{15}}$

8. $\sqrt{(2x)^8}$

9. $-\sqrt[4]{625s^8}$

10. $\sqrt[3]{216p^3q^9}$

11. $\sqrt{x^2 + 10x + 25}$

12. $\sqrt[3]{27x^9y^{12}}$

13. $\frac{3}{7-\sqrt{2}}$

14. $\frac{4}{3+\sqrt{3}}$

15. $\frac{\sqrt{5}}{8-\sqrt{6}}$

16. $y^{-\frac{1}{2}}$

17. $\sqrt{12} \cdot \sqrt[5]{12^3}$

18. $g^{\frac{4}{7}} \cdot g^{\frac{3}{7}}$

19. $s^{\frac{3}{4}} \cdot s^{\frac{13}{4}}$

20. $\left(u^{\frac{1}{3}}\right)^{\frac{4}{5}}$

21. $b^{\frac{3}{5}}$

22. $\sqrt{\frac{1}{32}c^4d^7}$

23. $\sqrt{\frac{9a^5}{64b^4}}$

24. $\sqrt[4]{\frac{16}{125a^3}}$

25. BRAKING The formula $s = 2\sqrt{5\ell}$ estimates the speed s in miles per hour of a car when it leaves skid marks ℓ feet long. Use the formula to write a simplified expression for s if $\ell = 85$. Then evaluate s to the nearest mile per hour.

26. PYTHAGOREAN THEOREM The measures of the legs of a right triangle can be represented by the expressions $6x^2y$ and $9x^2y$. Use the Pythagorean Theorem to find a simplified expression for the measure of the hypotenuse.

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T 6-5: I can simplify radical expressions by adding, subtracting and multiplying.

1. $2\sqrt{48} - \sqrt{75} - \sqrt{12}$

2. $(2 + \sqrt{3})(6 - \sqrt{2})$

3. $(1 - \sqrt{5})(1 + \sqrt{5})$

4. $(3 - \sqrt{7})(5 + \sqrt{2})$

5. $(\sqrt{2} - \sqrt{6})^2$

6. $(4\sqrt{12})(3\sqrt{20})$

7. $\sqrt{2} + \sqrt{8} + \sqrt{50}$

8. $\sqrt{12} - 2\sqrt{3} + \sqrt{108}$

9. $8\sqrt{5} - \sqrt{45} - \sqrt{80}$

10. $\sqrt{2}(\sqrt{1} - \sqrt{10})$

11. $\sqrt{810} + \sqrt{240} - \sqrt{250}$

12. $6\sqrt{20} + 8\sqrt{5} - 5\sqrt{45}$

13. $8\sqrt{48} - 6\sqrt{75} + 7\sqrt{80}$

14. $\sqrt[4]{3}(\sqrt[4]{27} - \sqrt[4]{16})$

15. $5\sqrt[3]{32} + 2\sqrt[3]{108} + \sqrt[3]{192}$

16. $\sqrt[4]{48} + \sqrt[4]{162} + \sqrt[4]{256}$

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T 6-6: I can solve equations containing radicals.

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Solve the following equations. **VERIFY all solutions.** Solutions that don't work with a box around them are considered incorrect! Box your answer!

1. $2\sqrt{4x+8} - 4 = 8$

2. $\sqrt{3x+1} = \sqrt{5x} - 1$

3. $3 + 2x\sqrt{3} = 5$

4. $(9x - 11)^{\frac{1}{2}} = x + 1$

5. $\sqrt{5-x} - 4 = 6$

6. $\sqrt{2x+1} + \sqrt{x} = 5$

7. $(3x + 1)^{\frac{1}{3}} + 5 = 0$

8. $\sqrt[4]{2x+1} - 3 = 0$

9. $5 + \sqrt{9x} = 4$

10. $3 + 5x^{\frac{1}{2}} = 0$

11. $2\sqrt{2x-7} = \sqrt{2x+2}$

12. $\sqrt{2x^2+5x} = -x - 10$