

**ANSWER SHEET**

Instructions: Place your answers to all problems on this sheet. Attach your work for the problems on the back. If answer doesn't fit on the answer sheet and is on your solution paper, indicate that in the answer slot below by writing "on solution paper".

1. \_\_\_\_\_

15. \_\_\_\_\_

2. \_\_\_\_\_

16. \_\_\_\_\_

3. \_\_\_\_\_

17. \_\_\_\_\_

4. \_\_\_\_\_

18. \_\_\_\_\_

5. \_\_\_\_\_

19. \_\_\_\_\_

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23. \_\_\_\_\_

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27. \_\_\_\_\_

14. \_\_\_\_\_

28. \_\_\_\_\_

MATH 100

Worksheet: \_\_\_\_\_

29. \_\_\_\_\_

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53. \_\_\_\_\_

54. \_\_\_\_\_

55. \_\_\_\_\_

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58. \_\_\_\_\_

59. \_\_\_\_\_

60. \_\_\_\_\_

Solve the problems on a separate sheet of paper. Write your answers on the answer sheet.

Section 8.1 – Evaluating Roots

Find all square roots of each.

1.  $\sqrt{10000}$

2.  $\sqrt{\frac{49}{144}}$

Use Pythagorean formula: find the length of the unknown side of the right triangle with sides a, b, c where c is the hypotenuse. Round answers to the nearest thousandth.

3.  $c = 17, a = 16$

4. A diagonal of a rectangle measures 32 inches. The length of the rectangle is 21 inches. Find the width of the rectangle.

Use the distance formula to find the distances between two points.

5.  $(5, -6)(-5, 6)$

6.  $(2, -2)(-6, 1)$

Section 8.2 – Multiplying, Dividing and Simplifying Radicals

Use the product rule for radicals to find each product

7.  $\sqrt{3} \cdot \sqrt{3}$

8.  $\sqrt{10} \cdot \sqrt{30}$

9.  $\sqrt{18a} \cdot \sqrt{2b}$

Simplify each radical.

10.  $\sqrt{250}$

11.  $-2\sqrt{54}$

Find each product and simplify

12.  $\sqrt{6} \cdot \sqrt{15}$

13.  $\sqrt{18} \cdot \sqrt{24}$

Using quotient and product rules, simplify each expression.

14.  $\frac{6\sqrt{30}}{18\sqrt{15}}$

15.  $\sqrt{\frac{5}{2}} \cdot \sqrt{\frac{16}{32}}$

Simplify the radicals

16.  $\sqrt{49x^3}$

17.  $\sqrt{18x^6}$

Section 8.3 – Adding and Subtracting Radicals

Add or subtract as indicated.

18.  $5\sqrt{10} + 3\sqrt{10}$

19.  $6\sqrt[5]{4} + 7\sqrt[5]{4} - 9\sqrt[5]{4}$

20.  $4\sqrt{128} - 2\sqrt{32}$

21.  $4\sqrt[3]{r^5} + 3\sqrt[3]{27r^5}$

Perform the indicated operations.

22.  $4\sqrt{7} \cdot \sqrt{3} - 2\sqrt{21}$

23.  $3\sqrt{12y} - 2\sqrt{5y} \cdot \sqrt{15}$

Section 8.4 – Rationalizing the Denominator

Rationalize each denominator.

24.  $\frac{\sqrt{4}}{\sqrt{24}}$

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

Perform the indicated operations and write all answers in simplest form. Rationalize all denominators.

26.  $\sqrt{\frac{3}{2}} \cdot \sqrt{\frac{5}{6}}$

27.  $\sqrt{\frac{20a^3b^4}{6a^2}}$

Rationalize each denominator.

28.  $\frac{\sqrt[3]{9}}{\sqrt[3]{4}}$

29.  $\frac{3}{\sqrt[3]{49}}$

Section 8.5 – More simplifying and Operations with Radicals

Simplify each expression.

30.  $\sqrt{5}(\sqrt{12} + 4\sqrt{7})$

31.  $(4\sqrt{5} + \sqrt{3})(\sqrt{2} - \sqrt{7})$

Rationalize each denominator.

32.  $\frac{4}{\sqrt{3}+2}$

33.  $\frac{\sqrt{3}+\sqrt{2}}{\sqrt{3}-\sqrt{2}}$

Write each quotient in lowest terms.

34.  $\frac{8\sqrt{7}+12}{14}$

35.  $\frac{12+6\sqrt{6}}{8}$

Section 8.6 – Solving Equations with Radicals

Solve each equation.

36.  $8 - \sqrt{y} = 2$

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

Solve the equation, if it has a solution.

38.  $\sqrt{x+1} + 9 = 0$

39.  $s = \sqrt{s^2 + 4s + 4}$

40.  $0 = 7 - \sqrt{r}$

Find all solutions for each equation.

41.  $\sqrt{x+11} - 1 = x - 2$

42.  $3\sqrt{p+6} = p + 6$

43.  $\sqrt[3]{5x-4} = \sqrt[3]{x^2}$

Section 8.7 – Using Rational Numbers as Exponents

Evaluate the expression.

44.  $25^{1/2}$

45.  $8^{1/3}$

46.  $64^{3/2}$

47.  $16^{-3/4}$

Simplify each expression. Write the answer in exponential form with positive exponents.

48.  $5^{1/2} \cdot 5^{3/2}$

49.  $7^{5/8} \cdot 7^{3/8}$

50.  $\left(\frac{r^{1/2}}{s^{-1/2}}\right)^{2/3}$

51.  $\frac{8^{3/5} \cdot 8^{-8/5}}{8^{-2}}$

Simplify the radical by first writing it in exponential form. Give the answer as an integer or a radical in simplest form.

52.  $\sqrt[4]{7^2}$

53.  $\sqrt[8]{81^2}$

54.  $\sqrt[8]{a^2}$