Algebra 1

Name_____ ID: 1

Review Radicals

Date_____ Period_____

Simplify.

1) $2\sqrt{900p}$

2) $-\sqrt{80x^3}$

Simplify. Use absolute value signs when necessary.

3) $4\sqrt{27x^2y^5z^3}$

4) $6\sqrt{648x^4yz^2}$

5) $-10\sqrt{42}$

6) $10\sqrt{600m^2n^4p}$

Simplify.

7) $\sqrt{15x} \cdot \sqrt{15x}$

8) $-3\sqrt{10n^3} \cdot 4\sqrt{20n^2}$

9) $\sqrt{15}(3 + \sqrt{6})$

10) $\sqrt{15b}(\sqrt{2} + \sqrt{10})$

11) $(-4 - 2\sqrt{2x})(-2 + 2\sqrt{2x})$

12) $(3\sqrt{2x} + 3\sqrt{3})(-4\sqrt{2x} - 3\sqrt{3x})$

13) $-2\sqrt{8} - \sqrt{5} - \sqrt{18}$

14) $3\sqrt{12} + 2\sqrt{2} - 2\sqrt{3}$

15) $-\sqrt{735} + 2\sqrt{224} - 7\sqrt{15} + 7\sqrt{7}$

16) $-2\sqrt{12} + 7\sqrt{12} + 6\sqrt{11} - 7\sqrt{8}$

17) $\dfrac{\sqrt{2m^4}}{3\sqrt{3m^4}}$

18) $\dfrac{5\sqrt{3k}}{\sqrt{6k^2}}$

19) $\dfrac{5 - \sqrt{5x^3}}{\sqrt{6x}}$

20) $\dfrac{4\sqrt{10x^2y^2}}{5\sqrt{6x^4y^4}}$

21) $\dfrac{2\sqrt{5x^2y}}{\sqrt{3xy^3}}$

22) $\dfrac{3\sqrt{4xy^3}}{2\sqrt{5x^3y^4}}$

Solve each equation. Remember to check for extraneous solutions.

23) $\sqrt{3x - 21} = 0$

24) $-9 = -3\sqrt{n-2}$

25) $2 = \sqrt{n}$

26) $\sqrt{x+7} = 3$

27. Find a third number so that the three numbers form a right triangle:

   i)   9 , 41

   ii)   13 , 85

28. Ms. Green tells you that a right triangle has a hypotenuse of 13 and a leg of 5. She asks you to find the other leg of the triangle. What is your answer?

29. Two joggers run 8 miles north and then 5 miles west. What is the shortest distance, to the *nearest tenth* of a mile, they must travel to return to their starting point?

30. Oscar's dog house is shaped like a tent. The slanted sides are both 5 feet long and the bottom of the house is 6 feet across. What is the height of his dog house, in feet, at its tallest point?

31. To get from point A to point B you must avoid walking through a pond. To avoid the pond, you must walk 34 meters south and 41 meters east. To the *nearest meter*, how many meters would be saved if it were possible to walk through the pond?
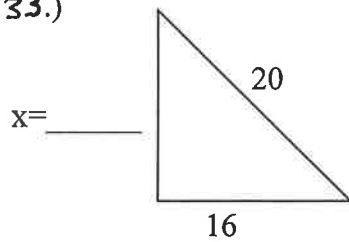
32. A suitcase measures 24 inches long and the diagonal is 30 inches long. How much material is needed to cover one side of the suitcase?
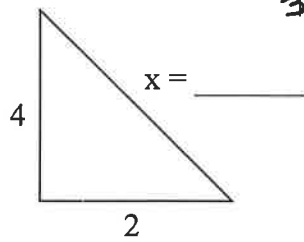
Name: _____

Pythagorean Theorem Problem

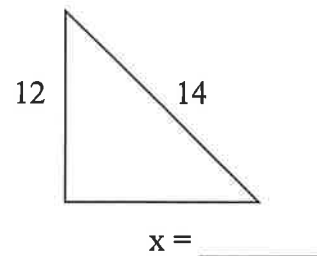Find the length of the missing side.

33.)

20

x= _____

16

34.)

4

x = _____

2

35.)

12   14

x = _____

Determine whether the triangle with the given side lengths is a right triangle by writing "yes" or "no" in the blank.. Show your work to prove how you got your answer

36.) a = 6, b = 8, c = 10 _____   **37.)** a = 14, b = 16, c =18 _____

38. What is the length of the ladder? It's 6 ft. from the house at the bottom and touches the wall 14 ft. up at the top. **Simplify your radical**

14

6
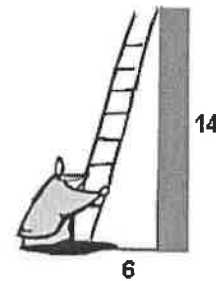
39.) In triangle ABC, side AB has a length of 6cm and side BC has a length of 10cm. What is the length of side (hypotenuse) AC? **DRAW A PICTURE AND LABEL.**

40) A rectangular flower bed is 9 feet wide and 12 feet long. What is the length of the diagonal?
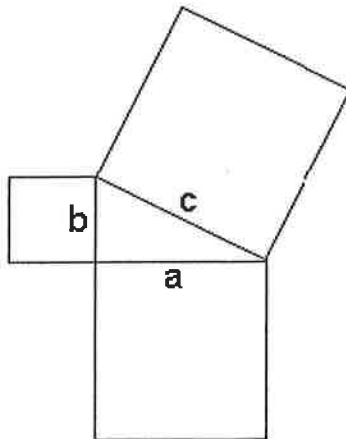
Vocabulary:

41) Define "Legs": _____

42) Define "Hypotenuse": _____

43) Write the formula for the Pythagorean Theorem: _____.

44) If the area of the square off of one side (a) of the right triangle is 81, what is the length of the side (a)?_____

Area of square
with side (a) : Area =81

45) Pythagorean Theorem only works on _____ triangles.

46) Which side of a tringle a, b , and c are legs and which is the hypotenuse?

a = _____

b = _____

c = _____