Grade 8 Math Unit 1 REVIEW NAME:_____

Class:_____

1. In $3^2=9$, identify: the exponent:_____

the base:_____

the power:_____

the perfect square:_____

2. In $\sqrt{169} = 13$, identify : the square root:_____

The radical sign:_____

The perfect square:_____

3. 25 is called a _____ because :

25 = _____X_____ =_____

Product of same factor Written as a power

4. Simplify:

A) square of 3	B) square root of 121	C) 7^2=_____	D) $\sqrt{100}$ = _____
E) $\sqrt{5^2}$ = _____	F) square root of 36 cm^2	G) square of 2 mm	H) $\sqrt{2500}$ = _____

5. A) DRAW a model of a square with area of 16 cm^2	B) The side length of the square is _____.	C) Find the perimeter if this square.

6. A) Draw a model of square with side length of 8mm.	B) Find the area of this square.	C) Find the perimeter of this square.

7. Write the inverse operation for each of the following:

A) If $\sqrt{100} = 10\ then$ _____

B) If $12^2 = 144$ then _____

C) If $\sqrt{49} = 7\ then$ _____

D) If $9^2 = 81$ then _____

8. Using the number line below, estimate the correct placement of the following numbers:

$$\sqrt{8},\quad 1^2\ ,\quad \sqrt{73}\ ,\ \sqrt{5^2}\ ,\ 3^2$$

-------+----------+---------+---------+---------+---------+---------+---------+---------+-------

1 2 3 4 5 6 7 8 9

9 A) Show how you estimate the value of $\sqrt{5}$	B) Show how you estimate the value of $\sqrt{58}$
C) Complete the statement: $\sqrt{33}$ is between _____ and _____	D) Complete the statement: $\sqrt{71}$ is between _____ and _____

10. Arrange the following in ascending order. Explain/Show why your arranged them this way.

$$\{\ 2^2\ ,\ \sqrt{49},\quad 5\ ,\ \sqrt{1}\ ,\ \ 3^2\ \ ,\ \sqrt{3^2}\ \}$$

_____ _____ _____ _____ _____ _____

11. A) STATE the PYTHAGORGEAN THEOREM:_____

_____

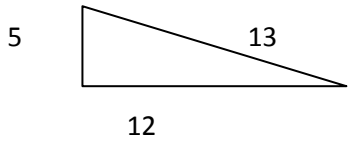
_____

B) The side opposite the right angle in a right triangle is the _____

C) The sides which make up the right angle in a right triangle are the _____.

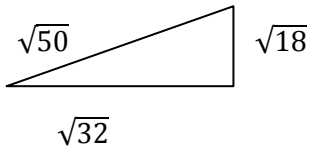
12.Given the following diagrams:

A)



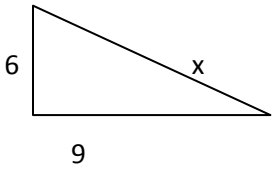
Explain why this is a right triangle.

B)

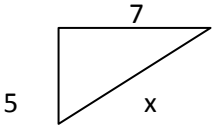


Explain why this is a right triangle.

C) Find the missing length given the right triangle .



D) Find the missing length given the right triangle .



13. Using rectangles made from square tiles, show:

A) 9 is a perfect square.	B) 22 is NOT a perfect square

14. Using a LIST of factors, show why:

A) 49 is a perfect square.	B) 20 is NOT a perfect square.

15. A) Make a factor tree for 18.

Prime factorization of 18 is _____

16. Using prime factorization show why:

A) 121 is a perfect square	B) 12 is not a perfect square.

17. Fred wants to put a diagonal brace between the opposite corners in a rectangular frame. The dimensions of the frame is 40 cm by 60 cm. Find the length of this brace (estimate to two decimal places). MAKE A DIAGRAM to support your answer. (3)

18. Albert uses a 5 m ladder to climb to reach a bird feeder in a tree. If the bottom of the ladder is 1.5 m from the side of the tree, how high is the bird feeder from the ground (estimate to two decimal places)? MAKE A DIAGRAM to support your answer. (3)

19. George wants to place a triangular pool in the corner of a garden. Where the two walls meet is a right angle. One side is 7m and the other is 5.5 m long. George wants to border the pool with flowers. What is the length of border he needs. (Estimate to two decimal places.) USE A DIAGRAM to help your answer. (3)