Name:_____ **Grade 8**

Unit 1 – Square Roots and Pythagorean Theorem <u>Test REVIEW</u>

Show your work for the following

1. a)List the factors of 216. Is the number a perfect square? Explain with numbers of factors.

   b) List the factors of 72. Is the number a perfect square? Explain with numbers of factors.

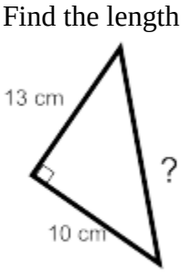
   c) List the factors of 36. Is the number a perfect square? Explain with numbers of factors.

2. Find the square root of the following using the given method:
   (a) $\sqrt{1764}$ – product of perfect squares

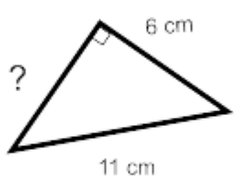
   (b) $\sqrt{4900}$ – prime factorization **(hint: TREE)**

3. Find the length of the indicated side in each triangle (SHOW WORK)

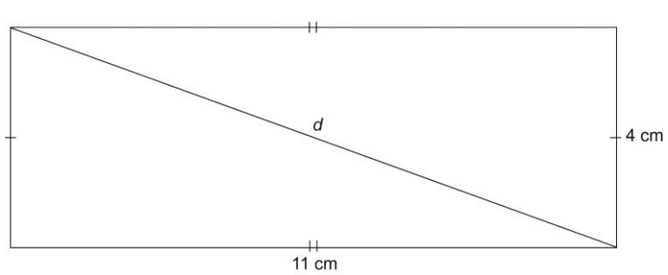
(a)



(b)



4. Find the length of the diagonal, d, in this rectangle.



5. Simplify.

a) square 49 = _____

b) square root of 36 = _____

c) $(\sqrt{35})^2$ = _____

6. Estimate the following (make sure to show work)

(a) $\sqrt{190}$ (b) $\sqrt{20}$

8. Determine whether a triangle with each set of side lengths is a right triangle. Justify your answers. (Show work)

8cm, 9 cm, and 11 cm

10. A trucker has two companies to choose to work at.

Company A follows route 1 and pays $15/km

Company B follows route 2 and pays $19/km

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a) What is the trucker's pay if he goes with company A?

b) What is the trucker's pay if he goes with company B?
(Note: this requires 2 steps)

c) Which is the better option? Explain