Name: _____ Period: _____

Math 9: Real Numbers and Square Roots Quiz

Full credit will only be awarded for all work shown in a neat and organized manner.

1. Write down a number that is an integer but not a whole number. **Explain** your answer.

2. Write down a number that is a real number but not a rational number. **Explain** your answer.

3. For each number, write down **ALL** number categories that it belongs to (natural, whole, integers, rational, irrational, real).

   a) 0 _____

   b) $-73.\overline{895}$ _____

   c) $\sqrt{-5}$ _____

   d) $\sqrt{25}$ _____

4. **EXPLAIN** why the number 361 is a Perfect Square.

5. Evaluate each square root. Write your answer as a **fraction or integer**.
   (If the answer does not exist, write the answer as $\varnothing$)

   a) $\sqrt{\frac{4}{121}}$

   b) $-\sqrt{\frac{81}{100}}$

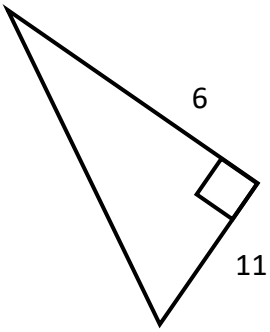
   c) $\sqrt{4^2 - 5^2}$

   d) $\sqrt{8^2} - \sqrt{12^2}$

   e) $\left(\sqrt{4} + \sqrt{16}\right)^2$

6. Find a whole number whose **square root** is between 12 and 13. (***Explain your reasoning)***

7. Solve for the length of the missing side. Answer **exactly** with a square root, then to **one decimal place**.



8. Taylor is leaning a 12.3m ladder against a wall. If the bottom of the ladder is 4.7m from the bottom of the wall, how high is the top of the ladder above the ground? (**HINT**: Draw a picture!)
[*Answer to one decimal place*]