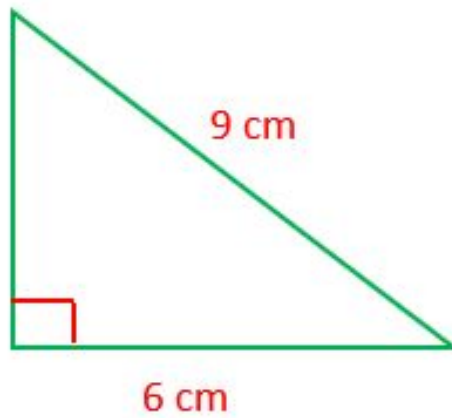


**SchoolNova, Math 5c
Placement Test Review**

1. In the following right triangle, determine the length of the third side.



2. Express each of the following decimals as fractions $\frac{m}{n}$, where m and n are integers:
- (a) $0.\bar{7}$ (b) $0.\bar{45}$ (c) $0.\overline{375}$ (d) $1.\bar{2}$

3. Solve the following equations for x , and check your solution:

(a) $\frac{x}{5} = 4$

(b) $\frac{x+1}{3} = 8$

(c) $\frac{5}{8}x = 10$

(d) $\frac{1}{2}x = \frac{1}{4}x + 2$

(e) $\frac{x}{2} - \frac{x}{4} = 4$

(f) $\frac{x+2}{x+5} = 3$

4. Solve the following equations containing absolute values, and plot on a number line:

(a) $|x| = 4$.

(b) $|x + 2| = 7$.

(c) $|3x - 2| = 4$.

5. Determine each of the following products, that is, open the parenthesis and collect like terms:

(a) $(x + y) \times (x + y)$

(b) $(x + y) \times (x - y)$

(c) $(x + y)^2$

(d) $(x + 3y) \times (x + 5y)$

6. Simplify the following expressions:

(a) $\frac{25^{-4}}{5^2}$

(b) 2^{3^2}

(c) $\frac{2^{-5}}{4^{-2}}$

(d) $\frac{x^2 y^2}{x^4 y^5}$

7. Solve the following equations for x :

(a) $5^x = 25$

(b) $6^x = 1$

(c) $3^x = 3^2 \cdot 3^3$

(d) $7^{2x} = 49$

(e) $4^x = 2^3$

(f) $(3^4)^x = 81 \times 3^6$

(g) $8 \times 2^{x+2} = 32$

8. Write all numbers from 0 through 32 in base-2 and base-4.

9. Convert each of the following binary numbers to its equivalent decimal number:

(a) 11011

(b) 1001

(c) 1100

10. Find the base-2 representation of each of the following decimal numbers:

- (a) 25 (b) 128 (c) 33

11. (a) An urn contains 10 red, 12 green and 15 purple balls. We draw one ball from the urn at random. What is the probability that it is red?

(b) We put back the previously drawn ball.

(c) We draw another ball. What is the probability that it is not purple?