

# NUMBER SENSE TIPS (JULY 2024)

Leo Ramirez Sr. (The Wizard Maker)

www.rammaterials.com

For more teaching tips, visit the STORE and look for instructional Number Sense workbooks.

1. 
$$\frac{18}{(5^3)(2)} = \underline{\hspace{2cm}}.$$

$$\frac{18}{(5^3)(2)} = \frac{18}{(125)(2)} = \frac{9}{125}$$

Note : When dividing by 125, multiply the numerator by 8 and move the decimal point 3 places to the left.

$$9/125 = .072$$

2. Let  $(5x - 1)^2 = ax^2 + bx + c$ . Find  $a + b + c =$   
                    .

$a + b + c$  is the sum of the coefficients. To find the sum of the coefficients in the expansion, find the sum of the coefficients inside the parentheses, then raise to the given power.

Solution :  $(5 - 1)^2 = 4^2 = 16$

Example : Find the sum of the coefficients in the expansion of  $(9x + 3y)^3$ .

Solution :  $(9 + 3)^3 = 12^3 = 1728$

3. If a triangle has integral sides of 6, 10, and  $x$ , then  $x + 3 >$                      .

$$10 - 6 < x < 10 + 6$$

$$4 < x < 16$$

$$4 + 3 < x + 3 < 16 + 3 ; \quad 7 < x + 3 < 19 ;$$

Answer : 7

4.  $f'(x) = 2$ ,  $f(1) = 3$ , find  $f(4) =$  \_\_\_\_\_.

$$\int f'(x) dx = 2x + C$$

$$F(x) = 2x + C ; 3 = 2(1) + C ; C = 1$$

$$F(x) = 2x + 1 ; f(4) = 2(4) + 1 = 9$$

5. The minimum value of  $y = 3x^2 - 2$  is \_\_\_\_\_.

$$y' = 6x ; 6x = 0 ; x = 0$$

$$f(0) = 3(0)^2 - 2 = -2$$