

NUMBER SENSE TIPS (NOVEMBER 2020)

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1. $7243 \div 8$ has a remainder of _____.

The remainder when dividing by 8 can be found by finding the remainder when the 3-rightmost digits are divided by 8.

$$243 \div 8 = 30 \text{ remainder } 3. \text{ Answer is } 3.$$

2. $10 \frac{3}{11} \times 9 \frac{8}{11} = 100 - \underline{\hspace{2cm}}$ (fraction).

$$a^2 - b^2 = (a + b)(a - b)$$

$$10 \frac{3}{11} \times 9 \frac{8}{11} = (10 + \frac{3}{11})(10 - \frac{3}{11})$$

$$= 10^2 - (\frac{3}{11})^2 = 100 - \frac{9}{121}$$

Answer is $\frac{9}{121}$

3. How much greater in measure is the interior angle of regular nonagon than its exterior angle? _____.

$$180 - \frac{720}{n}$$

4. If $f(x) = 8x + 31$, then $f(4) - f(14) = \underline{\hspace{2cm}}$.

$$\text{If } f(x) = ax + b, \text{ then } f(p) - f(q) = (ap + b) - (aq + b) = ap - aq = a(p - q).$$

$$\text{Solution : } 8(4 - 14) = 8(-10) = -80$$

5. Estimate : $333 \times 125 \times 960 = \underline{\hspace{2cm}}$.

$(333 \times 960) \times 125$; Note : $.333... = 1/3$;

$(1/3 \times 960 \times 1000) \times 125$

$320,000 \times 125$; Use shortcut for multiplying by 125.

$320,000/8 \times 1000 = 40,000 \times 1000 = 40,000,000$

Range : $37,962,000 - 41,958,000$