

NUMBER SENSE TIPS (MAY 2019)

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1. Estimate : $332 \times 832 = \underline{\hspace{2cm}}$.

Note : $83 \frac{1}{3}\% = \frac{5}{6}$

$$(\frac{5}{6})(330) = (5)(55) = 275$$

Since $300 \times 800 = 240,000$ answer must have 6 digits.

Answer : 275,000

Range : 262,413 - 290,035

2. If $f(5x - 3) = 12x + 4$, then $f(12) = \underline{\hspace{2cm}}$.

$$5x - 3 = 12 ; 5x = 15 ; x = 3$$

$$12(3) + 4 = 36 + 4 = 40$$

3. If $f(x) = 3x^2 - 8x + 14$, then $f(x - 3)$ has an axis of symmetry of $x = \underline{\hspace{2cm}}$.

$$x\text{-value of vertex} = -b/2a = 8/(2 \times 3) = 8/6 = 1 \frac{1}{3}$$

$$\text{the axis of symmetry of } f(x - 3) = 1 \frac{1}{3} + 3 = 4 \frac{1}{3}$$

The vertex of $f(x) = C(x - h)^2 + k$ is $(2, 9)$, where $h = 2$
and $k = 9$.

The y-intercept $f(x) = C(x - h)^2 + k$ is $Ch^2 + k =$
 $3(2)^2 + 9 = 12 + 9 = 21$.

5. Estimate : The surface area of a sphere with radius 35 is _____
_____.

$$\text{Surface area of a sphere} = 4\pi(\text{radius})^2$$

$$= 4\pi(35)^2$$

$$= 4(1225)\pi$$

$$= 4900\pi = 4900(3.1)$$

$$= 3(4900) + .1(4900)$$

$$= 14,700 + 490 = 15,190$$

Range : 14,625 - 16,163