NUMBER SENSE TIPS (DECEMBER 2023)
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1. $\dfrac{1}{3}+\dfrac{2}{3}=1+...+\dfrac{14}{3}$ = _____.

$\dfrac{1+2+3+...+14}{3}$; The numerator can be found using

$\dfrac{n(n+1)}{2}$. $\dfrac{\frac{14(15)}{2}}{3}=\dfrac{105}{3}$ = 35

2. The axis of symmetry of f(x) = (x - 2)(x - 5) is x = _____.

Find one-half of the roots of the equation.

x - 2 = 0 and x - 5 = 0 ; x = 2 and x = 5.

(2 + 5)/2 = 7/2

3. Estimate $_{24}C_4$ = _____.

$\dfrac{24!}{20!4!}=\dfrac{(24)(23)(22)(21)}{(4)(3)(2)(1)}=23(22)(21)$

Approximate answer is 22^3 which is $(11 \times 2)^3 = 11^3 \times 2^3 = 8(1331) = 10,648$

Range : 10,095 - 11,157

4. The sum of the roots of f(x) = (3x - 2)(x - 4) is _____ (mixed number).

Find the sum of the roots.

3x - 2 = 0 and x - 4 = 0

x = 2/3 and x = 4 ; 2/3 + 4 = 4 2/3

5. The sum of the solutions of |x + 3| + 5 = 11 is _____.

|x + 3| = 6 ; Note : The sum of the roots of |ax + b| = c is – 2b/a.

Answer : - 2(3)/1 = - 6