Solution

$solve\ for\ x,\ x + \frac{x}{2} + \frac{x}{3} = 18 + \frac{a}{5}\ \ :\ \ x = \frac{540 + 6a}{55}$

Steps

$x + \frac{x}{2} + \frac{x}{3} = 18 + \frac{a}{5}$

Find Least Common Multiplier of $2, 3, 5$: 30 *Show Steps*

Multiply by LCM $= 30$

$x \cdot 30 + \frac{x}{2} \cdot 30 + \frac{x}{3} \cdot 30 = 18 \cdot 30 + \frac{a}{5} \cdot 30$

Simplify

$30x + 15x + 10x = 540 + 6a$

$55x = 540 + 6a$

Divide both sides by 55

$\frac{55x}{55} = \frac{540}{55} + \frac{6a}{55}$

Simplify

$x = \frac{540 + 6a}{55}$