

Sept. 29<sup>th</sup>

Solve Algebraically

$$\frac{1}{3}x - \frac{1}{5} = \frac{2}{3} \left( \frac{5}{5} \right) \quad -\frac{3}{4} \left( x - \frac{2}{3} \right) = \frac{5}{2}$$
$$+ \frac{1}{5} \quad + \frac{1}{5} \left( \frac{3}{3} \right)$$

$$\frac{1}{3}x = \frac{10}{15} + \frac{3}{15}$$

$$\frac{1}{3}x = \frac{13}{15}$$

→ 2 different ways to solve from here

$$\frac{\cancel{3}}{\cancel{3}}x = \frac{13}{\cancel{15}^5} \left( \frac{3}{3} \right)$$

$$x = \frac{13}{5}$$

$$x = 2\frac{3}{5}$$

$$\frac{1}{3}x = \frac{13}{15}$$

~~$$\frac{1x}{3} = \frac{13}{15}$$~~

$$\frac{39}{15} = \frac{13x}{15}$$

$$2\frac{9}{15} = x$$

$$\boxed{2\frac{3}{5} = x}$$

Strategy 1

Strategy 2

$$-\frac{3}{4} \left( x - \frac{2}{3} \right) = \frac{5}{2}$$

$$\left( \frac{4}{-3} \right) \frac{-3}{4} \left( x - \frac{2}{3} \right) = \frac{5}{2} \left( \frac{4}{-3} \right)$$

$$-\frac{3}{4} x + \frac{6}{12} = \frac{5}{2}$$

$$x - \frac{2}{3} = \frac{-10}{3}$$
$$+ \frac{2}{3} \quad + \frac{2}{3}$$

$$-\frac{3}{4} x + \frac{1}{2} = \frac{5}{2}$$
$$-\frac{1}{2} \quad -\frac{1}{2}$$

$$x = \frac{-8}{3}$$

$$\left( \frac{4}{-3} \right) \frac{-3}{4} x = \frac{4}{2} \left( \frac{4}{-3} \right)$$

$$x = -2 \frac{2}{3}$$

$$x = \frac{16}{-6}$$

$$x = -2 \frac{4}{6}$$

$$x = -2 \frac{2}{3}$$

## Strategy 3

$$\frac{-3}{4} \left( x - \frac{2}{3} \right) = \frac{5}{2}$$

Clearing  
Fractions

$$\frac{4}{1} \left[ \frac{-3}{4}x + \frac{1}{2} = \frac{5}{2} \right]$$

$$15 \left[ \frac{1}{3}x - \frac{1}{5} = \frac{2}{3} \right]$$

$$\frac{-12}{4}x + \frac{4}{2} = \frac{20}{2}$$

$$\frac{15}{3}x - \frac{15}{5} = \frac{30}{3}$$

$$\cancel{-3}x + \cancel{2} = 10$$

$$5x - \cancel{3} = 10$$

$$\frac{\cancel{-3}x}{\cancel{-3}} = \frac{8}{\cancel{-3}}$$

$$x = -2\frac{2}{3}$$

$$\frac{5x}{5} = \frac{13}{5}$$

$$x = 2\frac{3}{5}$$

\* When clearing fractions you have to remove parentheses mathematically \*

\* Find the common denominator + then multiply the entire equation by that number - changing the numerator \*

# Consecutive Integers

The sum of 3 consecutive integers is 132. What are the integers?

$$\begin{aligned}x &= 1^{\text{st}} \text{ integer} \\x+1 &= 2^{\text{nd}} \text{ integer} \\x+2 &= 3^{\text{rd}} \text{ integer}\end{aligned}$$

$$\cancel{x} + \cancel{x+1} + \cancel{x+2} = 132$$

$$\begin{array}{r}3x + \cancel{3} = 132 \\ \underline{\phantom{3x} - 3} \\ \phantom{3x} = 129\end{array}$$

$$\begin{aligned}x-1 &= 1^{\text{st}} \text{ integer} \\x &= 2^{\text{nd}} \text{ integer} \\x+1 &= 3^{\text{rd}} \text{ integer}\end{aligned}$$

$$\begin{array}{r}3x = 129 \\ \underline{\phantom{3x} - 3} \\ \phantom{3x} = 129\end{array}$$

$$x = 43$$

$$\cancel{x-1} + x + \cancel{x+1} = 132$$

$$\begin{array}{r}3x = 132 \\ \underline{\phantom{3x} - 3} \\ \phantom{3x} = 132\end{array}$$

$$x = 44$$

$$\boxed{43, 44, 45}$$

$$\boxed{43, 44, 45}$$

the sum of 3 consecutive odd integers is 57. What are the integers?

$x = 1^{\text{st}}$  odd integer  
 $x+2 = 2^{\text{nd}}$  odd integer  
 $x+4 = 3^{\text{rd}}$  odd integer

$$x + x + 2 + x + 4 = 57$$

$$3x + 6 = 57$$
$$\underline{-6} \quad \underline{-6}$$

17, 19, 21

$$\frac{3x = 51}{3} \quad \frac{51}{3}$$

x = 17

10  $[.6x - 1.2 = 32.4]$  Clearing  
Decimals

$$\begin{array}{r} 6x - 12 = 324 \\ +12 \quad +12 \end{array}$$

$$\frac{6x}{6} = \frac{336}{6}$$

$$\begin{array}{r} 56 \\ 6 \overline{)336} \\ \underline{-30} \phantom{0} \\ 36 \end{array}$$

$$x = 56$$

100  $[1.2x + 3.45 = 5.6]$

$$\begin{array}{r} 120x + 345 = 560 \\ -345 \quad -345 \end{array}$$

$$\frac{120x}{120} = \frac{215}{120}$$

$$x = 1 \frac{95}{20} = 5$$

$$x = 1 \frac{19}{24}$$