

MAT 12) S^y 1.1 #525, 43, 76

#513-26 Solve & Check

$$\textcircled{25} \quad \frac{3}{2}x + \frac{1}{3} = \frac{1}{4}x - \frac{1}{6}$$

$$\text{LCD} = 2 \cdot 2 \cdot 3 = 12$$

$$(12) \left(\frac{3}{2}x \right) + (12) \left(\frac{1}{3} \right) = (12) \left(\frac{1}{4}x \right) - (12) \left(\frac{1}{6} \right)$$

$$(6)(3x) + 4 = 3x - 2$$

$$18x + 4 = 3x - 2$$

$$18x = 3x - 6$$

$$15x = -6$$

$$x = -\frac{6}{15} = \boxed{-\frac{2}{5} = x}$$

$$\left(\frac{3}{2} \right) \left(-\frac{2}{5} \right) + \frac{1}{3} = \left(\frac{1}{4} \right) \left(-\frac{2}{5} \right) - \frac{1}{6}$$

$$-\frac{3}{5} + \frac{1}{3} = -\frac{1}{10} - \frac{1}{6}$$

$$\left(-\frac{3}{5} \right) \left(\frac{2}{3} \right) + \left(\frac{1}{3} \right) \left(\frac{2}{5} \right) = \left(\frac{1}{10} \right) \left(\frac{2}{3} \right) - \left(\frac{1}{6} \right) \left(\frac{5}{5} \right)$$

$$\frac{-9 + 5}{15} = \frac{-3 - 5}{30}$$

$$-\frac{4}{15} = \frac{-8}{30} = -\frac{4}{15} \checkmark$$

MAT 121 S 1,1 #543,76

43 Solve eq'n. Identify as identity, conditional or inconsistent

$$\frac{1}{x-3} - \frac{1}{x+3} = \frac{6}{x^2-9} \quad \text{LCD} = (x-3)(x+3)$$

$$(x-3)(x+3) \left(\frac{1}{x-3} \right) - (x-3)(x+3) \left(\frac{1}{x+3} \right) = \left(\frac{6}{x^2-9} \right) (x-3)(x+3)$$

$$x+3 - (x-3) = 6$$

$$x+3-x+3=6$$

$$6=6$$

IDENTITY

$\{x \mid x \neq \pm 3\}$

Domain of the identity

76 Solve. $6 - 4|x+3| = -2$

$$-4|x+3| = -8$$

$$|x+3| = 2$$

$$x+3=2 \quad \text{OR} \quad x+3=-2$$

$$x=-1 \quad \text{OR} \quad x=-5$$

$x \in \{-5, -1\}$