

MAT 099 § 2.1 #s 11, 21, 27, 41, 64

#s 1-34 solve and check

(11)  $5y + 12 = 2y - 3$

$$5y = 2y - 15$$

$$3y = -15$$

$$y = -\frac{15}{3}$$

$$\boxed{y = -5}$$

$$5(-5) + 12 = 2(-5) - 3$$

$$-25 + 12 = -10 - 3$$

$$-13 = -13 \checkmark$$

(21)  $-2(5y - 1) - y = -4(y - 3)$

$$-10y + 2 - y = -4y + 12$$

$$-11y + 2 = -4y + 12$$

$$-11y = -4y + 10$$

$$-7y = 10$$

$$\boxed{y = -\frac{10}{7}}$$

~~$$-2(5(-\frac{10}{7}) - 1) - (-\frac{10}{7}) = -4(-\frac{10}{7} - 3)$$~~

$$-2(5(-\frac{10}{7}) - 1) - (-\frac{10}{7}) = -4((-\frac{10}{7}) - 3)$$

$$-2(-\frac{50}{7} - 1 \cdot \frac{7}{7}) + \frac{10}{7} = -4(-\frac{10}{7} - 3 \cdot \frac{7}{7})$$

$$-2(\frac{-50 - 7}{7}) + \frac{10}{7} = -4(\frac{-10 - 21}{7})$$

$$-2(\frac{-57}{7}) + \frac{10}{7} = -4(\frac{-31}{7})$$

$$\frac{114}{7} + \frac{10}{7} = \frac{124}{7} \checkmark$$

MAT 099 S' 2.1 #s 27, 41, 64

(2)

27

$$\frac{n-3}{4} + \frac{n+5}{7} = \frac{5}{14}$$

$$\text{LCD} = 2 \cdot 2 \cdot 7 = 28$$

METHOD 1:

$$28 \left( \frac{n-3}{4} \right) + 28 \left( \frac{n+5}{7} \right) = 28 \left( \frac{5}{14} \right)$$

$$7(n-3) + 4(n+5) = 2(5)$$

$$7n - 21 + 4n + 20 = 10$$

$$11n - 1 = 10$$

$$11n = 11$$

$$n = \frac{11}{11}$$

$$\Rightarrow \boxed{n = 1}$$

METHOD 2:

$$\left( \frac{7}{7} \right) \left( \frac{n-3}{4} \right) + \left( \frac{4}{4} \right) \left( \frac{n+5}{7} \right) = \left( \frac{2}{2} \right) \left( \frac{5}{14} \right)$$

$$\frac{7n-21}{28} + \frac{4n+20}{28} = \frac{10}{28}$$

$$7n - 21 + 4n + 20 = 10$$

$$11n - 1 = 10$$

$$11n = 11$$

$$\boxed{n = 1}$$

$$\frac{1-3}{4} + \frac{1+5}{7} = \frac{5}{14}$$

$$-\frac{2}{4} + \frac{6}{7} = \frac{5}{14}$$

$$-\frac{1}{2} + \frac{6}{7} = \frac{5}{14}$$

$$\left( -\frac{1}{2} \right) \left( \frac{7}{7} \right) + \left( \frac{6}{7} \right) \left( \frac{2}{2} \right) = \frac{5}{14}$$

$$-\frac{7}{14} + \frac{12}{14} = \frac{5}{14} \checkmark$$

MAT 099 \$2.1 #541, 64

#535-66 SOLVE.

(41)  $4(x+5) = 3(x-4) + x$

$4x+20 = 3x-12+x$

$4x+20 = 4x-12$  ← you should probably see it won't work

$4x = 4x - 32$

$0 = -32$  !? No SOLUTION!

~~XXXXXXXXXX~~

$\boxed{\emptyset}$

(64)  $\frac{1}{5}(2y-1) - 2 = \frac{1}{2}(3y-5) + 3$

LCD = 10

METHOD 1 :

$10(\frac{1}{5})(2y-1) - 10(2) = (10)(\frac{1}{2})(3y-5) + 10(3)$

$2(2y-1) - 20 = 5(3y-5) + 30$

$4y - 2 - 20 = 15y - 25 + 30$

$4y - 22 = 15y + 5$

$4y = 15y + 27$

$-11y = 27$

$\boxed{y = -\frac{27}{11}}$

MAT 099 §2.1 #64

(4)

METHOD 2:

$$\frac{1}{5}(2y-1) - 2 = \frac{1}{2}(3y-5) + 3 \quad \text{LCD} = 10$$

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

$$\frac{2(2y-1) - 10(2)}{10} = \frac{(3y-5)(5) + 10(3)}{10}$$

← SAME DENOMINATORS

$$4y - 2 - 20 = 15y - 25 + 30$$

← Focus NOW ON NUMERATOR

See Method 1 for the rest of this one.