

Review:

1. Translate into a variable expression and simplify: "The difference between half of a number and 6 less than twice that number." $\frac{1}{2}n - (2n - 6) = \frac{1}{2}n - 2n + 6 = \boxed{-\frac{3}{2}n + 6}$

2. An equation that is true for only some instances of the variable is called: conditional.

3. An equation that is never true for any instances of the variable is called: contradiction.

4. An equation that is always true for any instance of the variable is called: identity.

5. One way to simplify an equation involving fractions is to get rid of the fractions by: multiplying both sides by least common denominator.

6. The solution set to a contradictory equation is:

\emptyset .

7. The solution set to an identity is: \mathbb{R} .

2.1
99. $3(2x+2) - 4(x-3) = 2(x+9)$

$$6x + 6 - 4x + 12 = 2x + 18$$

$$2x + 18 = 2x + 18$$

identity
solution: all real #'s

$$\mathbb{R}$$
$$(-\infty, \infty)$$

97.

$$\cancel{5} \cdot \frac{4[(x-3)+2(1-x)]}{\cancel{5}} = (x+1) \cdot 5$$

$$4[x-3+2(1-x)] = 5x+5$$

$$4[x-3+2-2x] = 5x+5$$

$$4[-x-1] = 5x+5$$

$$-4x-4 = 5x+5$$

$$-4-5 = 5x+4x$$

$$\frac{-9}{9} = \frac{9x}{9}$$

$$\boxed{-1 = x}$$

$$90. \quad 8 \div \frac{1}{x} = -3$$

$$8 \cdot \frac{x}{1} = -3$$

$$8x = -3$$

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

98.

$$2584 \div x = \underline{54} \cdot \frac{46}{x}$$

$$\cancel{x} \cdot \frac{2584}{\cancel{x}} = \frac{54 \cdot 46}{\cancel{x}} \cdot \cancel{x}$$

$$2584 = 54 \cdot 46$$

$$2584 = 2484$$



$$\begin{array}{r} 21 \\ 54 \\ 46 \\ \hline 324 \\ 2160 \\ \hline 2484 \end{array}$$

2.2 Coin, Stamp, & Integer Problems

4. collection has 22 coins
total value of \$4.45
dimes & quarters
how many quarters?

coin	# of coins	value per coin	total value
dimes	$22-x$	\$0.10	$0.1(22-x)$
quarters	x	\$0.25	$0.25x$

$$0.1(22-x) + 0.25x = 4.45$$

$$2.2 - 0.1x + 0.25x = 4.45$$

$$0.15x = 2.25$$

$$15x = 225$$

$$x = 15 \text{ quarters}$$

14.

Stamp	# stamps	value per stamp	total value
3¢	5x	.03	.03(5x)
12¢	x	.12	.12x
15¢	x-4	.15	.15(x-4)

$$3.18 = .03(5x) + .12x + .15(x-4)$$

$$3.18 = 0.15x + 0.12x + 0.15x - 0.6$$

$$3.78 = 0.42x$$

$$378 = 42x$$

$$9 = x$$

$$\begin{array}{r} 42 \overline{) 378} \\ \underline{378} \\ 0 \end{array}$$

9-4 = 5 " 15¢ stamps

20. one integer is 4 more than another integer. the sum of the integers is 26. find them.

$$\rightarrow x + (x + 4) = 26$$

$$2x = 22$$

$$x = 11, 15$$

22. first x
second - twice first $2x$
third - 3 less than the second $2x - 3$
sum is 42

$$x + 2x + 2x - 3 = 42$$

$$5x = 45$$

$$x = 9$$

9, 18, 15

26. consecutive even (or odd)
integers : x, x+2, x+4, x+6, ...

$$2(x + x + 4) = x + 2 + 21$$

$$2(2x + 4) = x + 23$$

$$4x + 8 = x + 23$$

$$3x = 15$$

$$x = \cancel{5, 7, 9}$$

no solution!

27. 3 odd's : $x, x+2, x+4$

$$3(x+2) = 7 + x + x + 4$$

$$3x + 6 = 11 + 2x$$

$$x = 5$$

5, 7, 9

2.2
odd #'s
Quiz tomorrow
Test Wednesday