Chapter 1 Homework

1.1 #1-137 odd

1.2 #97-113 odd

1.3 #30-57 odd; 97-105 odd; and study properties!

1.4 #1-31 odd

Chapter 2 Homework

2.1 #39-77 odd

2.2 #7-27 odd

2.3 #7-25 odd

2.4 #5,7,11,17,19,23,27

2.5 #35-71 odd

~~2.6 #33-69 odd~~

8th period:

2.5 due Tuesday

Test #1 Wednesday

Test on Chapters 1 & 2

- set notation
- number sets
- properties of numbers
- distributive property
- order of operations
- combining like terms
- evaluating expressions
- writing numerical expressions from verbal expressions
- solving linear equations
- solving linear inequalities and compound inequalities
- setting up and solving word problems in one variable

15. Simplify. $-|-16| - |24|$

16. Simplify. $\frac{2}{3} - \left[\frac{3}{8} + \frac{5}{6}\right] \div \frac{3}{5}$

$\frac{2}{3} - \left[\frac{3}{8} \cdot \frac{3}{3} + \frac{5}{6} \cdot \frac{4}{4}\right] \div \frac{3}{5}$

$\frac{2}{3} - \left[\frac{9+20}{24}\right] \div \frac{3}{5}$

$\frac{2}{3} - \frac{29}{24} \cdot \frac{5}{3}$

$\frac{24}{24} \cdot \frac{2}{3} - \frac{29}{24} \cdot \frac{5}{3} = \frac{24(2) - 29(5)}{72}$

$= \frac{48 - 145}{72} = \frac{-97}{72}$

17. Evaluate the variable expression when $a = 2, b = 3, c = -1, and\ d = -4$.

$-3d \div \left|\frac{ab - 4c}{2b + c}\right|$

$-3(-4) \div \left|\frac{(2(3) - 4(-1))}{(2(3) + (-1))}\right|$

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

$= -3(-4) \div \left|\frac{10}{5}\right|$

$= -3(-4) \div 2$

$= 12 \div 2 = \boxed{6}$

18. Translate into a variable expression. Do not simplify.

the difference between the square of a number and the total of twelve and three times the number

$x^2 - (12 + 3x)$

21. Find three consecutive even integers such that twice the sum of the first and third integers is twenty more than the second integer.

$x, x+2, x+4$

$2(x + x+4) = x+2 +20$

$2(2x+4) = x+22$

$4x+8 = x+22$

$4x-x = 22-8$

$3x = 14$

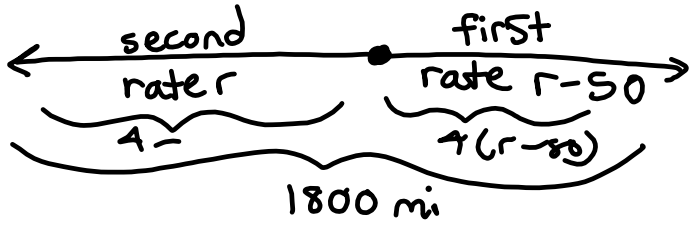
$x = 14/3$

22. Fifty liters of pure maple syrup that costs $10 per liter are mixed with imitation maple syrup that costs $4 per liter. How much imitation maple syrup is needed to make a mixture that costs $5 per liter?

type of thing	cost per liter $/L	·	amount/volume L	=	total cost $
pure	10		50		10(50)
imitation	4		x		4x
mixture	5		50+x		5(50+x)

$$10(50) + 4x = 5(50+x)$$

23. Two airplanes start from the same point and fly in opposite directions. The first plane is flying 50 mph slower than the second plane. In 4 h, the planes are 1800 mi apart. Find the rate of each plane.



thing	rate	time	distance
plane1	r-50	4	4(r-50)
plane2	r	4	4r

$$4(r-50) + 4r = 1800$$

24. How many quarts of water must be added to 5 qt of an 80% antifreeze solution to make a 50% antifreeze solution?

thing	amount	% concentration	amount of substance
80%	5 g	.8	5(.8)
water	x	0	x(0) = 0
50%	5+x	.5	.5(5+x)

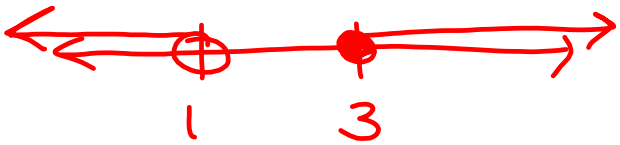
$$5(.8) = .5(5+x)$$

25. Solve. Write the solution set in interval notation. $3x + 7 < 10$ *or* $2x - 1 \geq 5$

$3x < 10 - 7$ ∪ $2x \geq 5 + 1$

$3x < 3$ $2x \geq 6$

$x < 1$ $x \geq 3$



$(-\infty, 1) \cup [3, \infty)$

$\{x \mid x < 1 \text{ or } x \geq 3\}$

$x, x+2$

6. The sum of 2 consecutive odd numbers is 104. What is the second number in this sequence?

$x + x + 2 = 104$

$2x = 102$

$x = 51$

53

7. A tea mixture was made from 30 pounds of tea that costs \$6.00 per pound and 70 pounds of tea that costs \$3.20 per pound. Find the cost per pound of the tea mixture.

	amount	cost per pound	total cost
\$6 tea	30	6	30(6)
\$3.20 tea	70	3.2	70(3.2)
mixture	100	x	100x

$30(6) + 70(3.2) = 100x$

I. Translate into a variable expression, but do not simplify.

1. one-half the total of six times a number and twenty two

$x, 33 - x$

2. The sum of two numbers is 33. Using x to represent the ~~larger~~ of the two numbers, translate "the difference between six more than twice the smaller number and three more than the larger number" into an expression with a single variable.

$6 + 2(33 - x) - (3 + x)$

II. Fill in the blank with one of the following three terms: identity, contradiction, conditional

3. An equation that is only true for some instances of the variable is called _____.

4. An equation that is true for all instances of the variable is called _____.

5. An equation that is not true for any instances of the variable is called _____.

$5, 15, 21, 3, 35$
$3 \cdot 5 \quad 3 \cdot 7 \quad 5 \cdot 7$

$LCM = 3 \cdot 5 \cdot 7 = \boxed{105}$

$16, 10, 25, 8, 20$
$2 \cdot 2 \cdot 2 \cdot 2 \quad 5 \cdot 2 \quad 5 \cdot 5 \quad 2 \cdot 2 \cdot 2 \quad 2 \cdot 2 \cdot 5$

$LCM = 2 \cdot 2 \cdot 2 \cdot 2 \cdot 5 \cdot 5 = \boxed{400}$

The sum of two integers is 96. Five times one integer is six less than the other integer. What are the integers?

$x, 96 - x$

$5x = 96 - x - 6$

$6x = 90$

$x = \frac{90}{6} = 15$

$5(96 - x) = x - 6$

$\boxed{15 \text{ \& } 81}$

The sum of three consecutive odd integers is -251. What is the largest of the three?

$x, x+2, x+4$

$x + x+2 + x+4 = -251$

$3x + 6 = -251$

$3x = -257$

$x = \frac{-257}{3}$

$\emptyset$

The sum of three consecutive odd integers is 99. Find the second one.

$x + x+2 + x+4 = 99$

$3x + 6 = 99$

$3x = 93$

$x = 31$

33