Honors Chapter 3 HW #3 (Review and Word Problems)

INSTRUCTION: Do problems on notebook paper and attach to the back of this hanout. **Clearly show your work to receive full credit and circle your final answer.**

Solve AND Check the equation.

1. $\dfrac{x+6}{7} = \dfrac{x-4}{3}$

2. $\dfrac{3(w+4)}{4w} = \dfrac{-5}{4}$

3. $5(2-x) + 2x = -3(x+5)$

4. $-\dfrac{2}{3}(18x - 12) = 5 - 3(4x - 1)$

5. 18 is what percent of 160? **Write the proportion to solve.**

6. 185% of 50 is what number? **Write the proportion to solve.**

7. 3.2% of what amount is $15? **Write the equation to solve.**

8. 42 is what percent of 400? **Write the equation to solve.**

9. What distance is 24% of 710 miles? **Write the equation to solve.**

Handwritten note: ON TEST SOLVE BY
① Proportion method $\dfrac{IS}{OF} = \dfrac{\%}{100}$
② EQUATION method
IS → = OF → mult
Δ% → decimal

10. ~~Volume of a Cone:~~ $V = \dfrac{\pi r^2 h}{3}$ Solve for **h**. Use the new formula, h, to find height for a cone with V=200 cu. ft; Π= 3.14; and r=12ft. **Round to 2 decimals.**

11. ~~Annual Interest Rate:~~ $A = P + Prt$ Solve for **r**.

Handwritten left margin: LITERAL EQ'S

Rewrite the equation so that y is a function of x. *Handwritten:* CH3 TEST → y=mx+b ← CH4 graphing

12. $\dfrac{2}{3}y + 4 = 2x$

13. $\dfrac{1}{7}(49 - 7y) = 5x + 3y + 14$

14. A car uses fuel at a rate of 32 miles per gallon. Predict how many miles the car can travel on 22.5 gallons of fuel. **Define a variable and write a proportion.**

Handwritten: *WP's will be proportions

15. A local gym charges nonmembers $8 per day to use the volleyball courts. Members pay a yearly fee of $15 and $2 per day to use the volleyball courts. Write and solve an equation to find how many days you must use the volleyball courts to justify becoming a member. **Also, state the key information, define the variable and equation, and answer in a full sentence.**

16. Two friends live 15 miles apart. One day, they decide to jog and meet each other. Tanya leaves her house and heads east, jogging at a rate of 2.5 miles per hour. At the same time Kelly leaves her house and heads west, jogging at a rate of 3.5 miles per hour. How long does it take for the two to meet? **Also, state the key information, define the variable and equation, and answer in a full sentence.**

17. Doug Upp can shovel coal at the rate of 16 tons per day. His brother Sid can shovel 10 tons per day. Doug starts shoveling and 3 days later Sid joins him. Doug and Sid shoveled 100 tons together. How many days did Doug shovel? How much coal did Doug and Sid shovel each?

    State the key information, define the variable(in terms of one of the brothers); write an equation, and answer in a full sentence.

18. $27.4y - 11.2 = 7.3y - 12.6$ **Solve and check. Round the solution to two decimal places.**

19. $7x - 29 - 21x = 3 - (12 + 2x)$ **Solve and check. Leave the solution as an interger or improper fraction.**

CH3 Review CW

3.4 | pg 157 #'s 42, 43

3.5 | pg 166 #'s 50wp, 51wp (proportion WP's)

3.6 | pg 171 #'s 24, 26

3.7 | pg 196 #'s 53-56 (use either proportion or EQUATION method)

3.8 | pg 196 #'s 59, 60

Chapter 3 Review

CW

| 3.4 | Pg 157 #'s 42, 43 |

42) $5(1.2K + 6) = 7.1 \cdot 1k + 34.4$

$6K + 30 = 7.1K + 34.4$

$\underline{-6K \qquad\qquad -6K}$

$30 = 1.1K + 34.4$

$\underline{-34.4 \qquad -34.4}$

$\dfrac{-4.4}{1.1} = \dfrac{1.1K}{1.1}$

$\boxed{K = -4}$

Do a Calc
check.

must show
last step:

$C: 6 = 6 \checkmark$

43) $-0.25 \overbrace{(4V - 8)} = 0.5 \overbrace{(4 - 2V)}$

$-V + 2 = 2 - V$

$+V \qquad\qquad +V$

$2 = 2$ (T)

Show step where
Variable drops out

$\boxed{V = \text{ALL Real #'s}}$

Tip: Calc
Check 0,1

| 3.5 CW | Pg 166 #'s 50wp, 51wp |

50) KI: Read 7 pgs → 10 min.
      # pages → 30 min.

$X = $ # of pages read

Prop: $\dfrac{\text{Pages}}{\text{min}} = \dfrac{7}{10} = \dfrac{X}{30}$

$\dfrac{210}{10} = \dfrac{10X}{10}$

$\boxed{X = 21}$

Student reads 21 pages
in 30 minutes

51) KI: 4 games → 10 goals
      18 games → ? goals

$X = $ # of goals scored

Prop $\dfrac{\text{games}}{\text{goals}} = \dfrac{4}{10} = \dfrac{18}{X}$

$\dfrac{4X}{4} = \dfrac{180}{4}$

$\boxed{X = 45}$

They scored 45 goals in
the remaining 18 games

3.6 pg 171 #'s 24, 26

(24) $-\dfrac{2}{3} = \dfrac{4V+4}{2V+14}$

$-\dfrac{-2}{-3} = \dfrac{+2}{3}$

$2(2V+14) = -3(4V+4)$

$4V+28 = -12V-12$

$+12V \qquad +12V$

$\overline{16V+28 = -12}$

$-28 \quad -28$

$\dfrac{16V}{16} = \dfrac{-40}{16}$

$\boxed{V = -2.5}$

C: $\dfrac{-2}{-3} = \dfrac{4(-2.5)+4}{2(-2.5)+14}$

$\dfrac{-2}{3} = \dfrac{-6}{9}$

produce $\rightarrow$ $-\dfrac{2}{3} = -\dfrac{2}{3}$ ✓

cross mult $\rightarrow$ $-2(9) = 3(-6)$

$-18 = -18$ ✓

[also $18 = 18$ ✓]

(26) $\dfrac{6}{4+2w} = \dfrac{-2}{w-10}$

$-2(2w+4) = 6(w-10)$

$-4w-8 = 6w-60$

$+4w \qquad +4w$

$\overline{-8 = 10w-60}$

$+60 \qquad\qquad +60$

$\overline{10w = 52}$

$\dfrac{10w}{10} = \dfrac{52}{10}$

$\boxed{w = 5.2}$

C: $\dfrac{6}{4+2(5.2)} = \dfrac{-2}{5.2-10}$

$\dfrac{6}{14.4} = \dfrac{-2}{-4.8}$

$0.41\overline{6} = 0.41\overline{6}$

$-4.8(6) = -2(14.4)$

$-28.8 = -28.8$ ✓

3.7 CW   pg 196 #'s 53-56

Proportions: $\dfrac{IS}{OF} = \dfrac{\%}{100}$ Use $P = \%$
                                              $N = number$

53 $\dfrac{N}{55} = \dfrac{30}{100}$ EQ: $N = 0.3 \cdot 55$

$\dfrac{100N}{100} = \dfrac{1650}{100}$

$\boxed{N = 16.5}$ ON TEST Remember UNITS!

54 $\dfrac{78}{100} = \dfrac{117}{N}$

$\dfrac{78N}{78} = \dfrac{11700}{78}$ EQ: $117 = 0.78 \cdot N$

$\boxed{N = 150}$

55 $\dfrac{P}{100} = \dfrac{21}{56}$ EQ: $P \cdot 56 = 21$

$\dfrac{56P}{56} = \dfrac{2100}{56}$

$\boxed{P = 37.5\%}$

56 $\dfrac{P}{100} = \dfrac{18}{60}$ EQ: $P \cdot 60 = 18$

$\dfrac{1,800}{60} = \dfrac{60P}{60}$

$\boxed{P = 30\%}$

Remember % sign

(3.8)   Pg 196   #'s 59, 60

(59) $3x = 2y - 18$
$ +18 +18$

$$\frac{2y}{2} = \frac{3x}{2} + \frac{18}{2}$$

$$\boxed{y = \frac{3}{2}x + 9}$$

(60) $4y - x = 20 - y$
$ +y +y$

$5y - x = 20$
$ +x +x$

implied 1
$$\frac{5y}{5} = \frac{\hat{x}}{5} + \frac{20}{5}$$

$$\boxed{y = \frac{1}{5}x + 4}$$