Honors Algebra 1 Name KEY ID: 1

Chapter 3 Practice Test (2023)

Date _____ Period ____

Grading: ALL problems are 8 points

Solve and Check! Show work clearly. Circle solution.

1) $4(x - 10) - 10 = -2(2x + 5) - 2x$

$4x - 40 - 10 = -4x - 10 - 2x$

$4x - 50 = -6x - 10$

$+6x \quad +6x$

$10x - 50 = -10$

$+50 \quad +50$

$\frac{10x}{10} = \frac{40}{10}$

$x = 4$

C: $4(4-10) - 10 = -2(2 \cdot 4 + 5) - 2(4)$

$4(-6) - 10 = -2(13) - 8$

$-34 = -34$ ✓

2) $-3(x + 2) + 4x = -4(x + 6) + 5x$

$-3x - 6 + 4x = -4x - 24 + 5x$

$x - 6 = x - 24$

$-x \quad -x$

$-6 \neq -24$ (F)

Must show this step

$x =$ NO SOLUTION

Tip: Use calc AND check $x = 0, 1$. Neither should work

3) $-2(7 + 2n) - 2(-8n - 9) = n + 7 - 3$

$-14 - 4N + 16N + 18 = N + 4$

$12N + 4 = N + 4$

$-N \quad -N$

$11N + 4 = 4$

$-4 \quad -4$

$11N = 0$

$\frac{11N}{11} = \frac{0}{11}$

$N = 0$

C: $-2(7 + 2 \cdot 0) - 2(-8 \cdot 0 - 9) = 0 + 7 - 3$

$-14 + 18 = 4$

$4 = 4$ ✓

4) $4(n + 7) - 8n = 7(-2n + 8) + 3n$

$4N + 28 - 8N = -14N + 56 + 3N$ Simplify!!

$-4N + 28 = -11N + 56$

$+11N \quad +11N$

$7N + 28 = 56$

$-28 \quad -28$

$\frac{7N}{7} = \frac{28}{7}$

$N = 4$

C: $4(4+7) - 8(4) = 7(-2 \cdot 4 + 8) + 3 \cdot 4$

$44 - 32 = 0 + 12$

$12 = 12$ ✓

5) Solve and Check! Show work clearly. Circle solution.

$8 - 10(2 + 2x) = -4x - 4(1 + 4x) - 8$

$8 - 20 - 20x = -4x - 4 - 16x - 8$

$-20x - 12 = -20x - 12$

$+20x \quad +20x$

$-12 = -12$ (T) ← you must show this step

X = ALL REAL NUMBERS

Tip: USE CALC and check X=0, 1 AND BOTH SHOULD WORK

Solve AND CHECK each proportion Circle solution.

6) $\frac{3x + 6}{15} = \frac{x}{-6}$

put - sign w/ NUM or Den

$-15x = -6(3x+6)$

$-15x = -18x - 36$

$+18x \quad +18x$

$3x = -36$

$x = -12$

C: $\frac{3(-12)+6}{-15} = \frac{-12}{-6}$

$2 = 2$ ✓

7) $\frac{-n + 6}{-11} = \frac{n + 4}{6}$

$6(-N+6) = -11(N+4)$

$-6N + 36 = -11N - 44$

$+11N \quad +11N$

$5N + 36 = -44$

$-36 \quad -36$

$5N = -80$

$N = -16$

C: $\frac{16+6}{-11} = \frac{-16+4}{6}$

$-2 = -2$ ✓

Word problem. Clearly show work -- define your variable, label your ratios/proportions, and answer in a sentence.

8) Section 3.5 pg 166 WP#50

KI: $\frac{\text{Pages}}{\text{MIN}} = \frac{7}{10} = \frac{P}{30}$ proportion

P = # Pages Read

$\frac{210}{10} = \frac{10P}{10}$

$P = 21$

The student Read 21 pages in 30 MINUTES

9) Section 3.5 pg 166 WP#51

KI: $\frac{\text{Games}}{\text{Goals}} = \frac{4}{10} = \frac{18}{G}$ proportion

G = # goals

$\frac{180}{4} = \frac{4G}{4}$

$G = 45$

The team scored 45 goals in 18 GAMES

Solve the percent problem using either PROPORTION METHOD or EQUATION METHOD.
Clearly show work!! Round to tenths (i.e. xx.x) Circle answer and include units.

10) 140% of 50 hours is what?

$\frac{140}{100} = \frac{N}{50}$

$100N = 7000$

$\frac{100N}{100} = \frac{7000}{100}$

$N = 70$ hours

$1.4 \cdot 50 = N$

$N = 70$ hours

EQUATION Method

- IS → =
- OF → MULT
- change % to decimals

PROPORTION Method

$\frac{IS}{OF} = \frac{\%}{100}$

11) 6 grams is what percent of 119 grams?

$\frac{6}{119} = \frac{P}{100}$

$119P = 600$

$\frac{119P}{119} = \frac{600}{119}$

$P = 5.04\%$

$\frac{6}{119} = \frac{P \cdot 119}{119}$

$P = 0.05 = 5\%$

ALWAYS Remember UNITS!!!

12) What is 80% of 65 inches?

$\frac{N}{65} = \frac{80}{100}$

$100N = 5200$

$\frac{100N}{100} = \frac{5200}{100}$

$N = 52$ in.

$N = 0.8 \cdot 65$

$N = 52$ in

13) 100 hours is what percent of 144.9 hours?

$\frac{100}{144.9} = \frac{P}{100}$

$144.9P = 10{,}000$

$\frac{144.9P}{144.9} = \frac{10{,}000}{144.9}$

$P = 69.01\%$

$\frac{100}{144.9} = \frac{P \cdot 144.9}{144.9}$

$P = 0.69 = 69\%$

Solve each equation for the variable "y".

14) $45 - 15y = -6x$

ISOLATE Y

$-45 \quad -45$

$-15y = -6x - 45$

$\frac{-15y}{-15} = \frac{-6x}{-15} - \frac{45}{-15}$

$y = \frac{2}{5}x + 3$

15) $-36 - 21x - 9y = 0$

ISOLATE Y

$+36 \quad +21x \quad +36 \quad +21x$

$-9y = 21x + 36$

$\frac{-9y}{-9} = \frac{21x}{-9} + \frac{36}{-9}$

$y = -\frac{7}{3}x - 4$

KEEP AS simplified improper fraction

BONUS: Solve the percent problem USING THE EQUATION METHOD.
Clearly write your equation!
(4 points each)

***** NO CREDIT USING THE PROPORTION METHOD but a good way to check :-) *****

16) 44 grams is 4% of what?

EQ: $44 = 0.04N$

$\frac{44}{0.04} = \frac{0.04N}{0.04}$

$N = 1,100$ grams

Check $\frac{44}{N} = \frac{4}{100}$

$N = 1,100$ ✓

17) 104 minutes is what percent of 52 minutes?

EQ: $\frac{104}{52} = \frac{P \cdot 52}{52}$

$P = 2.00 \rightarrow 200\%$

Check $\frac{104}{52} = \frac{P}{100}$

$P = 200\%$