

Chapter 3 Review #2 (proportions)

Solve AND CHECK each proportion

1) $\frac{2}{19} = \frac{6}{x}$

$6 \cdot 19 = 2 \cdot x$

$114 = 2x$

$\frac{114}{2} = \frac{2x}{2}$

$x = 57$

C: $\frac{2}{19} = \frac{6}{57}$

$0.105 \approx 0.105 \checkmark$

2) $\frac{2}{8} = \frac{12}{x-7}$

$8 \cdot 12 = 2(x-7)$

$96 = 2x - 14$

$+14 \quad +14$

$\frac{110}{2} = \frac{2x}{2} \quad x = 55$

C: $\frac{2}{8} = \frac{12}{55-7}$

$.25 = 12/48$

$.25 = .25 \checkmark$

3) $\frac{-10}{x-8} = \frac{-11}{x+1}$

← put - sign w/ the number

$-10(x+1) = -11(x-8)$

$-10x - 10 = -11x + 88$

$+11x \quad +11x$

$x - 10 = 88$

$+10 \quad +10$

$x = 98$

C: $-0.111 \approx -0.111 \checkmark$

4) $\frac{3}{12} = \frac{x+14}{3x-5}$

$12(x+14) = 3(3x-5)$

$12x + 168 = 9x - 15$

$-9x \quad -9x$

$3x + 168 = -15$

$-168 \quad -168$

$\frac{3x}{3} = \frac{-183}{3} \quad x = -61$

C: $0.25 = 0.25 \checkmark$

← Do calc check

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.

5) What percent of 25 inches is 103 inches?

$\frac{P}{100} = \frac{103}{25} \quad \text{OR} \quad P \cdot 25 = 103$

$P = 100(103) \div 25$

$P = 412\%$

6) What is 400% of 39 minutes?

$\frac{400}{100} = \frac{x}{39} \quad \text{OR} \quad x = 4.00 \cdot 39$

$x = 400(39) \div 100$

$x = 156 \text{ MINUTES}$

7) 40% of what is \$37?

$$\frac{40}{100} = \frac{37}{X} \quad \underline{\underline{\text{OR}}} \quad 0.4X = 37$$

$$X = 37(100) \div 40$$

$$X = \$92.50$$

8) 2% of what is 101 minutes?

$$\frac{2}{100} = \frac{101}{X} \quad \underline{\underline{\text{OR}}} \quad 0.02X = 101$$

$$X = 100(101) \div 2$$

$$X = 5,050 \text{ MINUTES}$$

9) What percent of 81 ft is 68 ft?

$$\frac{P}{100} = \frac{68}{81} \quad \underline{\underline{\text{OR}}} \quad P \cdot 81 = 68$$

$$P = 100 \cdot 68 \div 81$$

$$P \approx 83.95$$

$$P \approx 84\%$$

BONUS: Solve the percent problem USING THE EQUATION METHOD.

10) 5% of what is 15 grams?

$$\underline{\underline{\text{EQ}}}: \frac{0.05 \cdot X}{0.05} = \frac{15}{0.05}$$

$$X = 300 \text{ Grams}$$

11) What percent of 40 inches is 36 inches?

$$\underline{\underline{\text{EQ}}}: \frac{P \cdot 40}{40} = \frac{36}{40}$$

$$P = 0.9 = 90\%$$

DON'T FORGET
UNITS

Write the correct ratio:

12) Do book problems - pg 166 #'s 45, 47, 49 (do on separate paper)

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

13) Do Chapter 3 Review problems - pg 195 #'s 44, 51, 52 (do on separate paper - answers on my website)

12 Book problems pg 166 #'s 45, 47

45 KI: $\frac{\text{KENTUCKY}}{\text{REPS}} = \frac{6}{435}$ Reduce $\frac{2}{145}$

47 $\frac{\text{small}}{\text{large}} = \frac{96}{240}$ Reduce $\frac{8}{20} = \frac{2}{5}$

49 $\frac{\text{large}}{\text{ALL}} = \frac{240}{96+144+240} = \frac{240}{480}$ Reduce $\frac{3}{4} =$

13 pg 195 #'s 44, 51, 52

44 KI: 1 gal paint covers 560 sqft
want to cover 1,400 sqft

$x = \# \text{ gals of paint}$ EQ: $\frac{1}{560} = \frac{x}{1400}$

$\frac{560x}{560} = \frac{1400}{560}$

You need 2.5 GAL PAINT TO COVER 1,400 SQFT.

51 KI: STUDENT 65 WORDS FOR 2 MIN
words typed in 20 MIN

$x = \# \text{ WORDS TYPED}$

EQ: $\frac{\text{Words}}{\text{MIN}} = \frac{65}{2} = \frac{x}{20}$
 $\frac{2x}{2} = \frac{65 \cdot 20}{2}$

$(x = 650)$

STUDENT TYPED WORDS IN MIN

127 Book problems of 100 #12 11

52 KI: Scale $\frac{1 \text{ cm}}{12 \text{ km}}$ Distance 6.8 cm on Map

X = actual distance between cities (km)

$$\begin{aligned} \text{EQ: } \frac{\text{scale}}{\text{actual}} &= \frac{1}{12} = \frac{6.8}{X} \\ X &= 12(6.8) \\ X &= 81.6 \end{aligned}$$

The distance between the 2 cities is 81.6 km