

Chapter 3 Test Review Algebra Concepts

Name _____

Date _____ Period _____

Solve for x.

$$\begin{array}{r} 1.) \ x + 4 = 9 \\ -4 \quad -4 \\ \hline x = 5 \end{array}$$

$$\begin{array}{r} 2.) \ 7 = -2 + x \\ -2 + x = 7 \\ +2 \quad +2 \\ \hline x = 9 \end{array}$$

$$\begin{array}{r} 3.) \ \frac{7x}{7} = \frac{21}{7} \\ \hline x = 3 \end{array}$$

$$\begin{array}{r} 4.) \ -4 = -2x \\ -2x = -4 \\ -2 \quad -2 \\ \hline x = 2 \end{array}$$

$$\begin{array}{r} 5.) \ 2x + 7 = 15 \\ -7 \quad -7 \\ \hline 2x = 8 \\ 2 \quad 2 \\ \hline x = 4 \end{array}$$

$$\begin{array}{r} 6.) \ 3 - 5(6x + 3) = 8 \\ 3 - 30x - 15 = 8 \\ -30x - 12 = 8 \\ +12 \quad +12 \\ \hline -30x = 20 \\ -30 \quad -30 \\ \hline x = -\frac{2}{3} \end{array}$$

$$\begin{array}{r} 7.) \ 7x + 2(x-4) = 10 \\ 7x + 2x - 8 = 10 \\ 9x - 8 = 10 \\ +8 \quad +8 \\ \hline 9x = 18 \\ 9 \quad 9 \\ \hline x = 2 \end{array}$$

Write an expression.

$$8.) \ 7 \text{ fewer than twice a number. } x = -\frac{2}{3}$$

$$2x - 7$$

Solve for x.

$$\begin{array}{r} 9.) \ 3x - 7 + 8 = 4x + 24 + 5x \\ 3x + 1 = 9x + 24 \\ -1 \quad -1 \\ \hline 3x = 9x + 23 \\ -9x \quad -9x \\ \hline -6x = 23 \end{array}$$

$$\begin{array}{r} -6x = 23 \\ -6 \quad -6 \\ \hline x = -\frac{23}{6} \end{array}$$

$$10.) \ 8(x - 1) = -4(-1 + 3x)$$

$$\begin{array}{r} 8x - 8 = 4 - 12x \\ +8 \quad +8 \\ \hline 8x = 12 - 12x \\ +12x \quad +12x \\ \hline 20x = 12 \end{array}$$

$$\frac{20x}{20} = \frac{12}{20}$$

$$x = \frac{3}{5}$$

Solve for x.

Solve for x.

$$\begin{array}{r} 11.) \ \frac{2}{5}x + \frac{1}{3} = 4x - \frac{1}{5} \quad \text{LCD: 15} \\ 6x + 5 = 60x - 3 \\ -5 \quad -5 \\ \hline 6x = 60x - 8 \\ -60x \quad -60x \\ \hline -54x = -8 \\ -54 \quad -54 \\ \hline x = \frac{4}{27} \end{array}$$

$$\begin{array}{r} 12.) \ 0.26x = 0.2 + 0.13x \quad \text{multiply by 100} \\ 26x = 20 + 13x \\ -13x \quad -13x \\ \hline 13x = 20 \\ 13 \quad 13 \\ \hline x = \frac{20}{13} \end{array}$$

$$13.) \ \frac{4}{7}x = \frac{x}{5}$$

$$\frac{7x}{7} = \frac{20}{7}$$

$$x = \frac{20}{7}$$

$$14.) \ \frac{6}{x} = \frac{15}{12}$$

$$\frac{15x}{15} = \frac{72}{15}$$

$$x = \frac{72}{15}$$



Write as a decimal. *Move decimal to left twice

15.) 0.9%

0.009

16.) 85%

0.85

17.) 150%

1.50

Express as a percent. * Divide top by bottom. Multiply by 100. Put a %.

18.) $\frac{7}{20} = 0.35 \times 100$

35%

19.) $\frac{11}{15} = 0.73 \times 100$

73%

20.) What number is 5% of 30?

$x = 0.05(30)$

$x = 1.5$

21.) What percent of 14 is 18?

$\frac{p(14)}{14} = \frac{18}{14}$

$p = 1.29 = 129\%$

22.) A classroom in a school can only have 57 students for every 3 teachers. How many students can there be if there are 12 teachers?

$\frac{\text{students}}{\text{teachers}} = \frac{57}{3} = \frac{x}{12}$

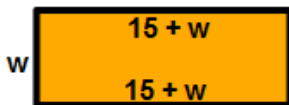
$\frac{3x}{3} = \frac{684}{3}$

$x = 228 \text{ students}$

23.) The perimeter of a rectangle is 325 ft. The length is 15 ft. greater than the width. Find the length and width.

Let: length = $15 + w$

width = w



$P = 325\text{ft}$
 $15 + w + w + 15 + w + w = 325$
 $4w + 30 = 325$
 $-30 \quad -30$

24.) The sum of two consecutive odd integers is 52. What are the integers?

Let:

$x = 1\text{st} \# : 25$

$x + 2 = 2\text{nd} \# : 27$

$x + x + 2 = 52$

$2x + 2 = 52$

$x = 25$

$\frac{2x}{2} = \frac{50}{2}$

$\frac{4w}{4} = \frac{295}{4}$
 $w = 76.25 \text{ ft}$
length = 91.25 ft