Sect 2.4 – 2.7 Unit Test

Name:_____   **Section:**_____

Solve for the indicated variable:

1)   Solve $x = y - 3r$ for y.   2)   Solve $p = vct$ for c.

3)   Solve $A = P + Prt$ for r.

Solve the following:

4)   The height of an object after it has been shot into the air is given by the formula $h = vt - 16t^2$.
   a)   Solve the formula for v
   b)   If, after 3.1 seconds, the object is 150.66 ft high, find the velocity v (in feet/second).

Solve the inequality. Graph the solution set and write the set in interval notation:

5) $4(e - 3) > 39$ 6) $7 - 13p \geq 7(p - 4) + 15$

7) $-15 \leq 2x + 3 < 23$

Write an equation and solve:

8)   What is 8.125% of 68?   9)   95 is what percent of 500?

10)   The number of new homes sold in the U.S. declined by 21.6% from July, 2005 to July, 2006. If the number of new homes sold in July, 2005 was 1.367 million homes, find the number of new homes sold in July, 2006.

11)   Juan invested some money in an account that paid 4.6% simple interest. After 15 months, he had $3468.60 in his account. Find the original amount (principal) he invested.

Write an equation and solve:

12)   LaTonya sold her camera and lens for $247. For the camera, she received three dollars less than four times the amount of money she received for the lens. How much did she receive for each?

13)   The length of a rectangle is three more than twice the width. If the perimeter of the rectangle is 66 feet, find the dimensions of the rectangle.

14) Triple the difference of a number and five is double the number subtracted from thirty-five. Find the number.

15) Find three consecutive even integers such that the sum of the first and the second, increased by 12, is fourteen less than three times the third even integer.

16) Juan is seven more than three times as old as Elroy. If the sum of their ages is 31 years, how old is Juan?

17) The measure of second angle of a triangle is five more than three times the measure of the first angle. The measure of the third angle is eleven less than twice the first angle. Find the measures of the angles.

18) Mara bought two pairs of shoes. The more expense pair was $7 more than triple the cheaper pair. If the difference in price was $32.58, find the price of each pair.

19) Which answers are unreasonable for the angles of a triangle:

a) 34˚, 78˚, & 68˚   b) 107˚, 33˚, & 40˚   c) 19˚, 21˚, & 72˚
d) 111˚, 25˚, & 91˚   e) 45˚, 45˚, and 90˚

In the problem below, the student has made an error. Use critical thinking to find and correct the error. Then finish working the problem.

20) If $3490 invested for 36 months earned $889.95 in simple interest, find the interest rate to the nearest tenth of a percent.
Solution:
   i = prt
   889.95 = (3490)r(36)
   889.95 = 125640r
   $\frac{889.95}{125640}$ = $\frac{125640r}{125640}$
   0.0070833... = r
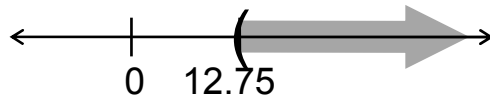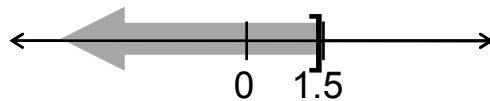So, r ≈ 7.1%

Answers:

1) $y = x + 3r$ 2) $c = \dfrac{p}{vt}$ 3) $r = \dfrac{A-P}{Pt}$ 4a) $v = \dfrac{h+16t^2}{t}$

4b) The velocity is 98.2 ft/s.

5) $(12.75, \infty)$

6) $(-\infty, 1.5]$

7) $[-9, 10)$

8)   5.525   9)   19%   10) ≈ 1.072 million homes

11)   He invested $3280. 12) The camera was $197; the lens was $50

13)   The dimensions are 23 ft by 10 ft.   14) The number is 10.

15)   The integers are 16, 18, and 20. 16)   Juan is 25 years old

17)   The angles are 31°, 98°, and 51° respectively.

18) The cheaper pair was $12.79 & the more expensive pair was $45.37.

19) c & d   20)   The interest rate was 8.5%.