Alg 2A Quiz #2 Review Sec 2-1 to 2-3, & Piece-wise Functions Fall 2016

Round decimals to the nearest hundredth unless otherwise noted.

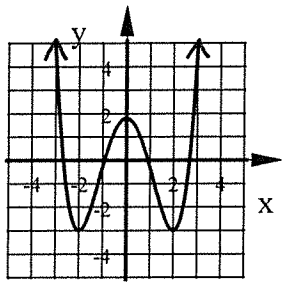
1. Write the equation of the line that passes through the two points given below. Give your answer in Slope-Intercept form. Points: $(8,-14)\&(12,-21)$

For 2 to 5, does each represent a function?

2. $(4,3),(3,-6),(8,2),(4,1)$

3. $(-1,5),(2,5),(3,9),(-7,0)$

4.



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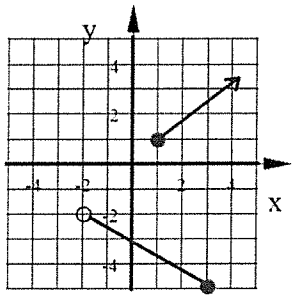


6. State the Domain and Range of the relation in Problem 2.
7. a) State the Domain and Range of the relation in Problem 4.
   b) State the Domain and Range of the relation in Problem 5.

8. Write the equation of the line that passes through each pair of points in the form specified, if any.

a) Both Point-Slope and Slope-Intercept Form $(2,17)\&(-1,5)$

b) $(3,-5)\&(3,7)$ c) $(-2,-4)\&(5,-4)$

9. Use this given line: $y = 4x - 9$

a) Write the equation of a line that is parallel to this line and passes through the point $(-2,3)$

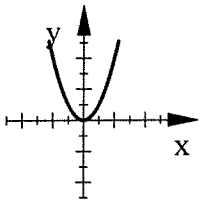
b) Write the equation of a line that is perpendicular to this line and passes through the point $(8,1)$

9. Is each pair of lines parallel, perpendicular, or neither?

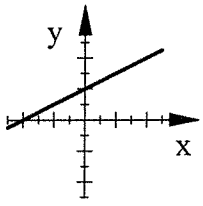
a)	b)	c)	d)	e)	f)
$y = 4x - 7$	$y = 3x - 7$	$y = -\frac{1}{2}x + 8$	$x = 4$	$y = 5$	$y + 1 = 2(x - 4)$
$y = \frac{1}{4}x + 3$	$6x - 2y = 14$	$2x + 4y = 24$	$y = 3$	$y = 5x - 7$	$2x + 4y = 20$

10. Does each graph represent a Direct Variation relationship?

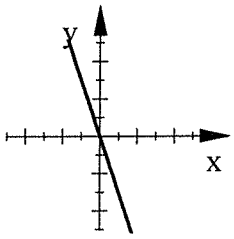
a)



b)



c)



11. State if each table represents Direct Variation. For the tables that show a variation do the following:

i) State the variation constant.

ii) Write the variation equation with the value of the constant.

iii) Find the value of x when $y = 100$

iv) Find the value of y when $x = -32$

a)

X	Y
−4	32.8
8	−65.6
15	−123
40	−328

b)

X	Y
−6.4	−14.4
−8	−18
24.8	5
7.72	17.37

c)

X	Y
54	12
180	40
252	56
315	70

12. The table below shows direct variation. Find the missing value of x and y.

X	Y
−8	30
6	−22.5
9	y
x	75

13. A direct variation passes through the point $(15,20)$. Write a direct variation equation using this information.

14. The two points given are from the same Direct Variation. Find the missing coordinate.
$(15,96)\&(x,160)$

15. The number of cars washed varies directly with the number of people helping at the car wash. 182 cars were washed when 13 people helped.

a) Find the variation constant (include units).

b) Write a direct variation equation.

c) How many people are needed to wash 294 cars?

16. The number of radios made varies directly with the number of hours the factory is open. In 12 hours there are 250 radios made. At this rate how many hours will it take to make the 400 radios that have been ordered.

17. Given $g(a) = 2a^2 - 9$. Find the range of $g(a)$ that corresponds to this domain $\{-5,2,5,10\}$

18. Given $m(p) = 2p - 5$ and $h(y) = y + 6$

a) Find $10m(4) + 2h(3)$ b) If $m(p) = 40$ find p.

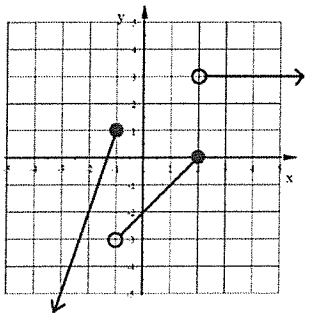
19. Graph each piecwise function.

a. $f(x) = \begin{cases} 2x+5 & \text{if } x \le -2 \\ 3 & \text{if } -2 < x \le 2 \\ -\frac{1}{2}x+2 & \text{if } x > 2 \end{cases}$

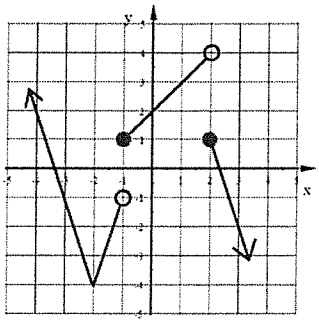
b. $f(x) = \begin{cases} -\frac{1}{3}x-4 & \text{if } x < 0 \\ -2|x-2|+1 & \text{if } 0 \le x < 3 \\ 2x-3 & \text{if } x \ge 3 \end{cases}$

20. Write the rule for each piecewise function.

a.



b.



Alg 2A Quiz #2 Review Sec 2-1 to 2-3, & Piece-wise Functions Fall 2016 ANSWERS

1. $y = -\frac{7}{4}x$ 2. No 3. Yes 4. Yes 5. No

6. Domain: $\{3,4,8\}$ Range: $\{-6,1,2,3\}$

7. a) Domain: All Real #'s Range: $y \geq -3$ b) Domain: $x > -2$ Range: $-5 \leq y < -2; y \geq 1$

8. a) Point-Slope: $y - 17 = 4(x-2)$ or $y - 5 = 4(x+1)$ Slope-Int: $y = 4x + 9$
   b) $x = 3$ c) $y = -4$

9. a) $y - 3 = 4(x+2)$ or $y = 4x + 11$ b) $y - 1 = -\frac{1}{4}(x-8)$ or $y = -\frac{1}{4}x + 3$

9. a) Neither b) Neither c) Parallel d) Perpendicular e) Neither f) Perpendicular

10. a) No b) No c) Yes

11. a) Yes. i) $k = -8.2$ ii) $y = -8.2x$ or $\frac{y}{x} = -8.2$ iii) $x \approx -12.20$ iv) $y = 262.4$
    b) No
    c) Yes. i) $k = \frac{2}{9}$ ii) $y = \frac{2}{9}x$ or $\frac{y}{x} = \frac{2}{9}$ iii) $x = 450$ iv) $y = \frac{64}{9}$

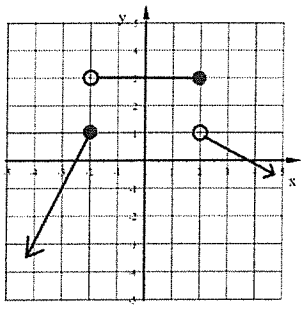
12. $x = -20$ $y = -33.75$

13. $y = \frac{4}{3}x$ or $\frac{y}{x} = \frac{4}{3}$ 14. $x = 25$

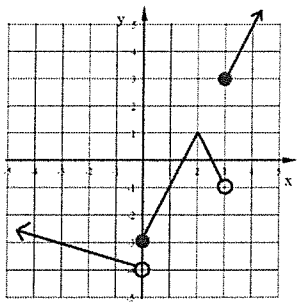
15. a) 14 cars/person b) $y = 14x$ c) 21 people

16. 19.2 Hours 17. Range: $\{-1,41,191\}$ 18. a) 48 b) 22.5

19.a.



b.



20. a. $f(x) = \begin{cases} 3x+4 & \text{if } x \leq -1 \\ x-2 & \text{if } -1 < x \leq 2 \\ 3 & \text{if } x > 2 \end{cases}$ b. $f(x) = \begin{cases} 3|x+2|-4 & \text{if } x < -1 \\ x+2 & \text{if } -1 \leq x < 2 \\ -3x+7 & \text{if } x \geq 2 \end{cases}$