

Linear Test 2 Review

Name: _____

It will cover:

*Parallel and Perpendicular lines

*Function Questions (domain, range, x-int, y-int, zeros, inc/dec, end behavior, int pos/neg, int inc/dec, equations)

*All linear forms ($y = mx + b$, $Ax + By = C$, and $y - y_1 = m(x - x_1)$)

State whether each pair of lines is parallel, perpendicular, or neither.

1. $y = \frac{1}{2}x - 5$
 $y = -2x + 6$

2. $3x - 4y = 12$
 $y = \frac{3}{4}x + 10$

3. $10x - 5y = 20$
 $-2x + y = -4$

4. Write an equation in slope-intercept form of a line that is a) parallel to and b) perpendicular to $y = \frac{3}{4}x - 3$ and goes through (2, -3).

a) Parallel equation: _____

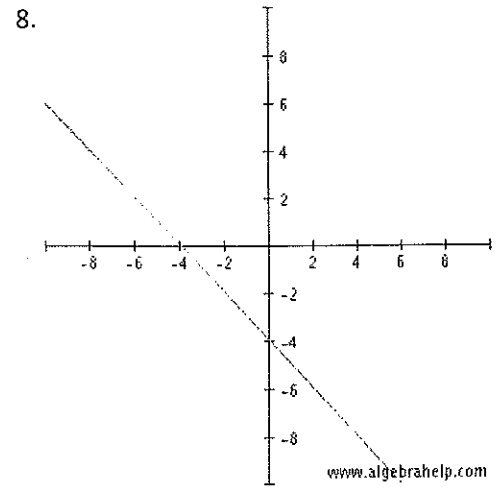
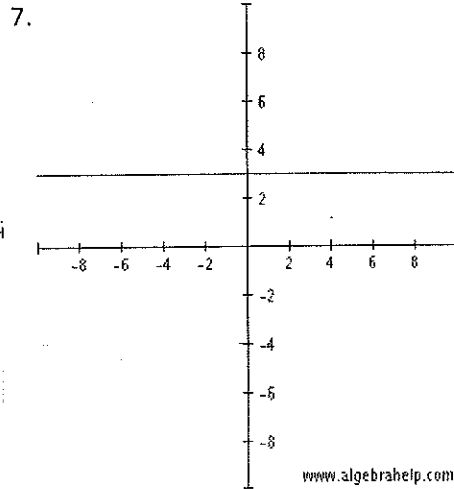
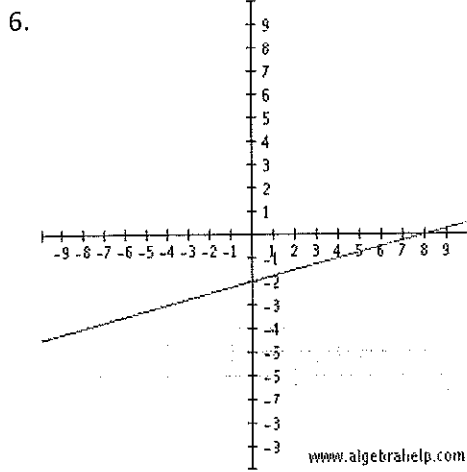
b) Perpendicular equation: _____

5. Write an equation in slope-intercept form of a line that is a) parallel to and b) perpendicular to $2x - 4y = 12$ and goes through (-4, -6).

a) Parallel equation: _____

b) Perpendicular equation: _____

Fill in the table below answering each of the function questions.



	6.	7.	8.
Is it a function? Why?			
Int Inc/dec			
Int pos/neg			
Domain			
Range			
x-intercept			
Zero			
y-intercept			
As $x \rightarrow \infty, y \rightarrow$ As $x \rightarrow -\infty, y \rightarrow$			
Slope of the line			
Equation in slope-intercept form			
Equation in standard form			

Write an equation for each situation below and then graph it. Don't forget to label your axes!

9. At 3 days, the tulips were 4 cm tall. After a total of 14 days, they were 23 cm tall. Let x be the number of days and y be the height in cm. Write and graph an equation to represent this situation.

Equation: _____

10. Amanda is working out in the gym and wants to burn 500 calories. If she burns 50 calories an hour on the bike and 100 calories an hour on the treadmill, let y = the number of hours she rides the bike and x = the number of hours on the treadmill. Write and graph an equation to represent this situation.

Equation: _____

11. Thomas has 500 ants in his ant farm and they are dying at a constant rate of 4 per week. Let x represent the number of weeks and y represent the number of ants remaining.

Equation: _____

Rewrite each equation into the form stated.

12. Rewrite into slope intercept and name the slope and y-intercept:

a. $5x - 8y = 20$

b. $3x + 9y = 15$

13. Rewrite into standard and name the x and y intercepts:

a. $Y = 2/3 x - 9$

b. $y = -0.2x + 5$

14. Rewrite into slope intercept:

a. $Y - 9 = -2/3 (x - 5)$

b. $y + 5 = 5/2 (x - 3)$

What happens to the graph?

15. If we change the 5 to a 2 in the equation $y = 5x - 6$?

16. If we change the $1/6$ to a $5/6$ in the equation $y = 1/6 x + 3$?

17. If we change the 4 to a 9 in the equation $y = -6x + 4$?

On graph paper, graph the following equations:

18. A. $3x + 2y = 15$

B. $4x - y = 7$

19. A. $y = -2/3 x + 1$

B. $y = 5/2 x - 3$

20. A. $y - 2 = 1/2 (x + 3)$

B. $y + 1 = -2(x - 4)$

21. A. $y = -5$

B. $y = 3$

22. A. $x = 6$

B. $x = -4$

Write an equation in slope intercept form that:

23. A. has a slope of $\frac{3}{4}$ and a y-intercept of 7

B. has a y-intercept of -2 and a slope of 4

24. A. passes through the points (5, -2) and (1, -3)

B. passes through the points (0, 5) and (4, 8)

25. Write an equation to in slope intercept form for the tables below.

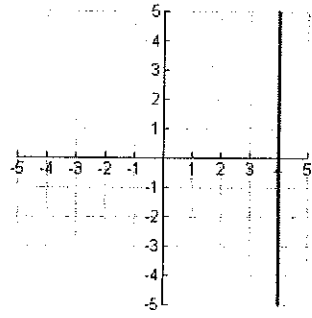
A.

X	Y
0	17
1	25
5	57
9	89

B.

X	Y
1	-4
2	2
5	20
11	56

26. Complete the table

Equation	$Y = 6$		$X = -2$	
Graph				
Type of line		Horizontal through (5,2)		
Slope				

27. Solve the following equations:

a. $8 = -3(x + 7)$

b. $15 + 5x = 3 - 2x$

c. $3(4m + 7) = 4(15 + 2m)$