Name: _____ Class: _____ Date: _____ ID: A

REVIEW:
SHOW ALL OF YOUR WORK
DO BEAUTIFUL WORK
CIRCLE YOUR FINAL ANSWER
PUT YOUR ANSWERS TO MULTIPLE CHOICE QUESTIONS ON THE BLANK PROVIDED
STAY CLASSY

Parallel lines and Sequences

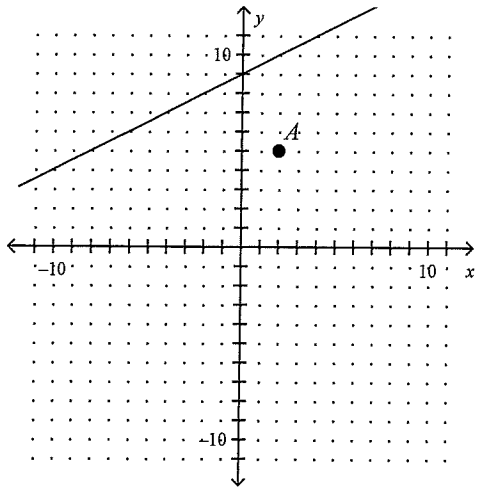
____ 1. Write an equation of the line that passes through $(-5, -1)$ and is parallel to the line $y = 4x - 6$.

a. $y = 4x + 19$
b. $y = 4x - 6$
c. $y = -5x + 19$
d. $y = -5x - 6$

____ 2. Write an equation of the line that goes through the point $(3, 7)$ and is perpendicular to the line $y = -3x + 6$.

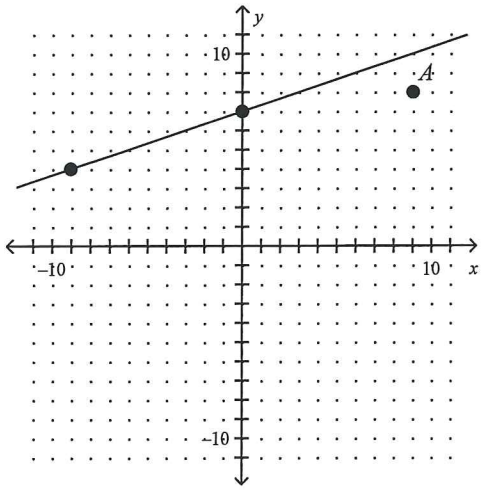
a. $y = \frac{1}{3}x + 6$
b. $y = -\frac{1}{3}x + 6$
c. $y = 3x + 2$
d. $y = -3x + 16$

____ 3. Find the equation of the line that passes through point A and is perpendicular to the line shown in the graph below.



a. $y = -2x + 9$
b. $y = \frac{1}{2}x - 9$
c. $y = \frac{1}{2}x + 9$
d. $y = -2x - 9$

____ 4. Find the equation of the line that is parallel to the line in the graph and passes through point A.



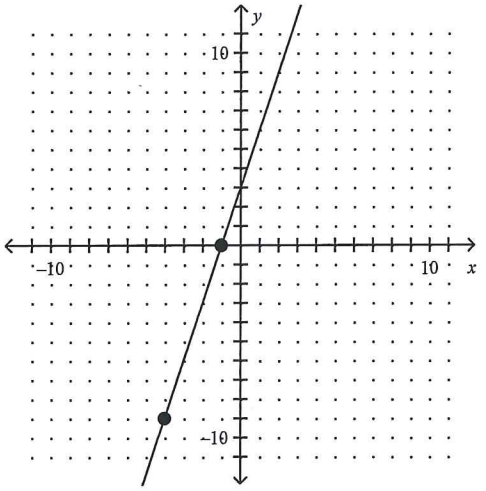
a. $y = \frac{1}{3}x + 5$

b. $y = 3x + 5$

c. $y = -\frac{1}{3}x + 7$

d. $y = 3x + 7$

____ 5. Which of the following lines is NOT parallel to the line shown in the graph?



a. $3x + y = 3$

b. $y - 3x = 9$

c. $-12x + 4y = 9$

d. $3x - y = 3$

____ 6. Which pair of lines could be perpendicular when graphed?

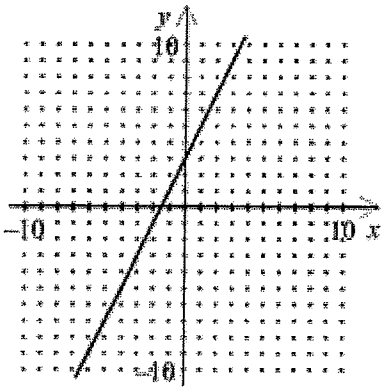
a. $y = 3, x = 5$

b. $x = 4, y = x$

c. $y = 2x, y = \frac{1}{2}x$

d. $y = 3, y = x$

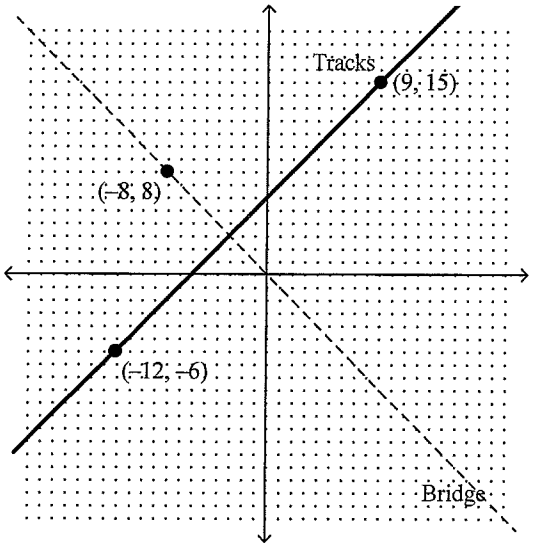
____ 7. The line $y = 2x + 3$ is graphed below.



Are the lines $y = 2x + 3$ and $2y - 4x = 6$ parallel, perpendicular, neither parallel nor perpendicular, or the same line?

a. the same line
b. neither parallel nor perpendicular
c. perpendicular
d. parallel

____ 8. A pedestrian bridge is to be built over railroad tracks running through a town. The bridge will be perpendicular to the tracks and the middle of the bridge will be directly above the tracks. If the town is represented on a coordinate grid, the tracks are a straight line running through (9, 15) and (−12, −6), with one end of the bridge at (−8, 8).



What are the coordinates of the other end of the bridge?

a. (2,−2)
b. (−3,3)
c. (0,0)
d. (3,−3)

9. Write an equation of the line that passes through $(7, -8)$ and is parallel to the line $y = 4x + 5$.

10. Write an equation of the line that passes through $(-18, -4)$ and is parallel to the line $y = \frac{1}{3}x + 3$.

11. Which of the following lines are parallel to each other?
$2x - 6y = 3$; $6x + 2y = 3$; $-2x + 6y = 3$

12. Write an equation of the line that passes through $(4, 0)$ and is perpendicular to the line $y = \frac{1}{5}x + 1$.

13. Create an equation to represent how to find any term in the sequence.

1, 3, 5, 7, ... $a_1 = 1$

14. Create an equation to represent how to find any term in the sequence.

-5, -1, 3, 7, ... $a_1 = -5$

15. Create an equation to represent how to find any term in the sequence.

-6, -11, -16, -21, ... $a_1 = -6$

16. Create an equation to represent how to find any term in the sequence.

3, 6, 12, 24, ... $a_1 = 3$

17. Create an equation to represent how to find any term in the sequence.

1, -1, 1, -1, ... $a_1 = 1$

18. Create an equation to represent how to find any term in the sequence.

4, 12, 36, 108, ... $a_1 = 4$

19. Simplify the following:

a. $\sqrt{12}$

b. $\sqrt{244}$

c. $\sqrt{5000}$

d. $\sqrt{60x^2}$

e. $\sqrt{117x^5y^3z}$

f. $\sqrt[3]{16}$

g. $\sqrt[4]{64}$

h. $\sqrt[3]{81x^4y^3z^2}$

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Parallel lines and Sequences

C 1. Write an equation of the line that passes through $(-5, -1)$ and is parallel to the line $y = 4x - 6$.

a. $y = 4x + 19$
b. $y = 4x - 6$
c. $y = -5x + 19$
d. $y = -5x - 6$

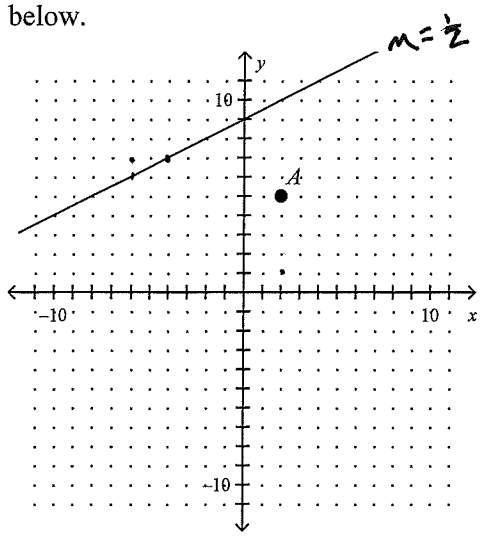
$y = 4x - 6$
$-1 = 4(-5) + b$
$-1 = -20 + b$
$b = 19$

A B 2. Write an equation of the line that goes through the point $(3, 7)$ and is perpendicular to the line $y = -3x + 6$.

a. $y = \frac{1}{3}x + 6$
b. $y = -\frac{1}{3}x + 6$
c. $y = 3x + 2$
d. $y = -3x + 16$

$-3 \perp m = \frac{1}{3}$
$7 = 3(\frac{1}{3}) + b$
$7 = 1 + b$
$-1 \quad -1$
$6 = b$

A. 3. Find the equation of the line that passes through point A and is perpendicular to the line shown in the graph below.



$m = \frac{1}{2}$
$m = -2$
$(2, 5)$
$5 = -2(2) + b$
$5 = -4 + b$
$+4 \quad +4$
$9 = b$

$y = -2x + 9$

a. $y = -2x + 9$
b. $y = \frac{1}{2}x - 9$
c. $y = \frac{1}{2}x + 9$
d. $y = -2x - 9$

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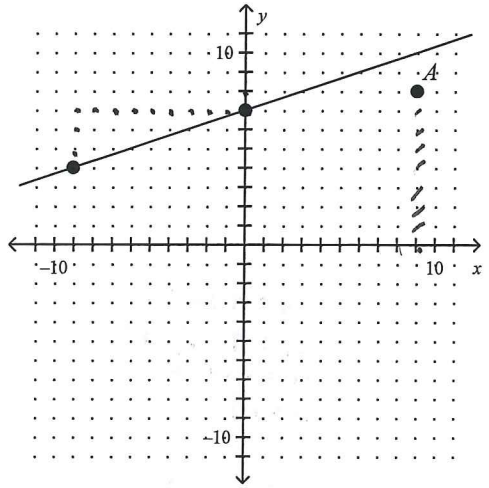
A

4. Find the equation of the line that is parallel to the line in the graph and passes through point A.



$\frac{3}{9} = \frac{1}{3}$

(9,8)

$8 = \frac{1}{3}(9) + b$

$8 = 3 + b$

$-3 \quad -3$

$5 = b$

$y = \frac{1}{3}x + 5$

a. $y = \frac{1}{3}x + 5$

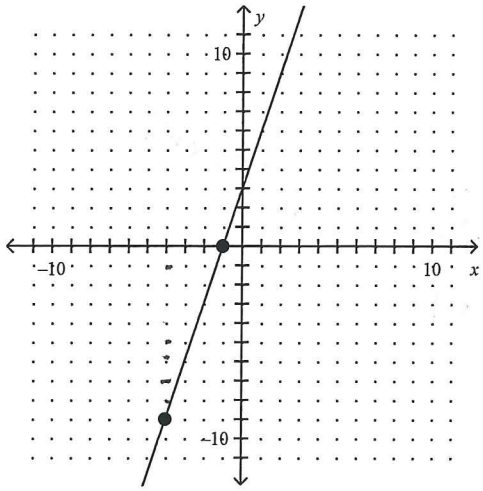
b. $y = 3x + 5$

c. $y = -\frac{1}{3}x + 7$

d. $y = 3x + 7$

~~B~~ A

5. Which of the following lines is NOT parallel to the line shown in the graph?



$\frac{9}{3} = 3$

$m = 3$

a. $3x + y = 3$ $y = -3x + 3$

$-3x$

b. $y - 3x = 9$

c. $-12x + 4y = 9$

d. $3x - y = 3$

$-3x \quad -3x$

A

6. Which pair of lines could be perpendicular when graphed?

a. $y = 3, x = 5$

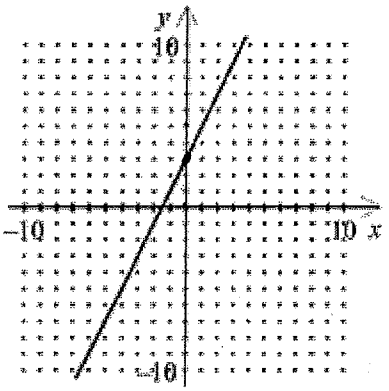
b. $x = 4, y = x$

c. $y = 2x, y = \frac{1}{2}x$

d. $y = 3, y = x$

A

7. The line $y = 2x + 3$ is graphed below.

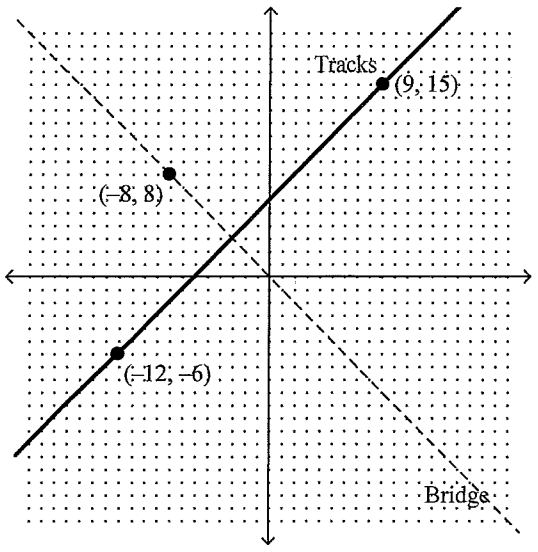


$2y - 4x = 6$
$+4x \quad +4x$
$\frac{2y}{2} = \frac{4x+6}{2}$
$y = 2x+3$

Are the lines $y = 2x + 3$ and $2y - 4x = 6$ parallel, perpendicular, neither parallel nor perpendicular, or the same line?

a. the same line
b. neither parallel nor perpendicular
c. perpendicular
d. parallel

____ 8. A pedestrian bridge is to be built over railroad tracks running through a town. The bridge will be perpendicular to the tracks and the middle of the bridge will be directly above the tracks. If the town is represented on a coordinate grid, the tracks are a straight line running through $(9, 15)$ and $(-12, -6)$, with one end of the bridge at $(-8, 8)$.



skip

What are the coordinates of the other end of the bridge?

a. $(2, -2)$ b. $(-3, 3)$ c. $(0, 0)$ d. $(3, -3)$

9. Write an equation of the line that passes through $(7, -8)$ and is parallel to the line $y = 4x + 5$.

$-8 = 4(7) + b$
$-8 = 28 + b$
$-28 \quad -28$
$-36 = b$

$y = 4x - 36$

10. Write an equation of the line that passes through $(-18, -4)$ and is parallel to the line $y = \frac{1}{3}x + 3$.

$-4 = \frac{1}{3}(-18) + b$

$-4 = -6 + b \quad b = 2$

$y = \frac{1}{3}x + 2$

11. Which of the following lines are parallel to each other?

$2x - 6y = 3$; $6x + 2y = 3$; $-2x + 6y = 3$

$-6y = -2x + 3$ $\quad 2y = -6x + 3$ $\quad 6y = 2x$

$y = \frac{1}{3}x +$ $\quad y = -3x +$

12. Write an equation of the line that passes through $(4, 0)$ and is perpendicular to the line $y = \frac{1}{5}x + 1$.

$0 = 4(-5) + b$ $\quad m = -5$

$0 = -20 + b$

$20 = b$ $\quad y = -5x + 20$

13. Create an equation to represent how to find any term in the sequence.

1, 3, 5, 7, ... $a_1 = 1$ $\quad a_n = 1 + 2(n-1)$

14. Create an equation to represent how to find any term in the sequence.

-5, -1, 3, 7, ... $a_1 = -5$ $\quad a_n = -5 + 4(n-1)$

15. Create an equation to represent how to find any term in the sequence.

-6, -11, -16, -21, ... $a_1 = -6$ $\quad a_n = -6 - 5(n-1)$

16. Create an equation to represent how to find any term in the sequence.

3, 6, 12, 24, ... $a_1 = 3$ $\quad a_n = 3 \cdot 2^{(n-1)}$

17. Create an equation to represent how to find any term in the sequence.

1, -1, 1, -1, ... $a_1 = 1$ $\quad a_n = 1 \cdot -1^{(n-1)}$

18. Create an equation to represent how to find any term in the sequence.

4, 12, 36, 108, ... $a_1 = 4$

$\times 3$ $\times 3$ $\times 3$

$a_n = 4 \cdot 3^{(n-1)}$

19. Simplify the following:

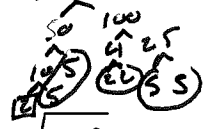
a. $\sqrt{12}$

$2\sqrt{3}$

b. $\sqrt{244}$

$2\sqrt{61}$

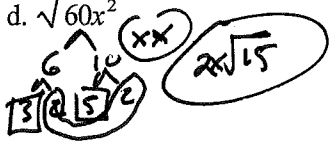
c. $\sqrt{5000}$



$5 \cdot 5 \cdot 2\sqrt{2}$

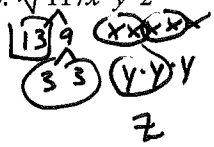
$50\sqrt{2}$

d. $\sqrt{60x^2}$



$2x\sqrt{15}$

e. $\sqrt{117x^5y^3z}$



$3 \cdot x \cdot x \cdot y\sqrt{13 \cdot x \cdot y \cdot z}$

$3x^2y\sqrt{13xyz}$

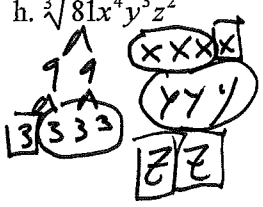
f. $\sqrt[3]{16}$

$2\sqrt[3]{2}$

g. $\sqrt[4]{64}$

$2\sqrt[4]{2}$

h. $\sqrt[3]{81x^4y^3z^2}$



$3 \cdot x \cdot y\sqrt[3]{3 \cdot x \cdot z \cdot z}$

$3xy\sqrt[3]{3xz^2}$