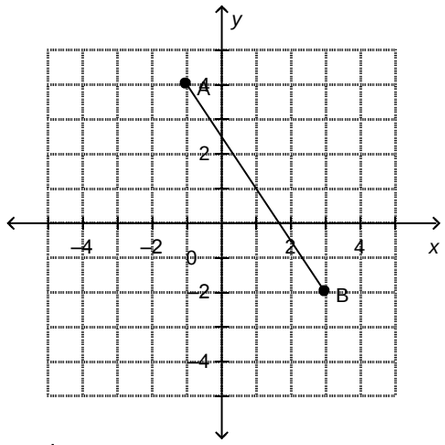
Math 1201 Chapter 6 Review

Multiple Choice
Identify the choice that best completes the statement or answers the question.

____ 1. Determine the slope of this line segment.

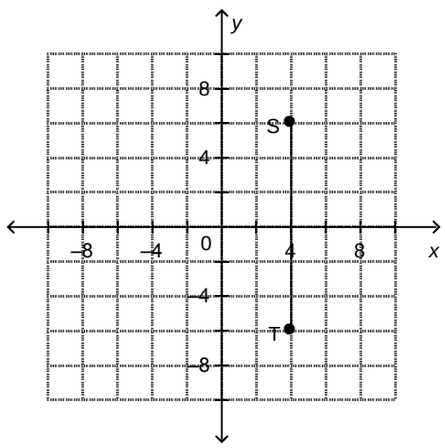


a. $-\frac{2}{3}$
b. $-\frac{3}{2}$
c. $\frac{2}{3}$
d. $\frac{3}{2}$

____ 2. Determine the slope of the line that passes through G(3, –3) and H(–5, 9).

a. $\frac{3}{2}$
b. $-\frac{2}{3}$
c. $\frac{2}{3}$
d. $-\frac{3}{2}$

____ 3. Is the slope of this line segment positive, negative, zero, or not defined?



a. zero
b. positive
c. not defined
d. negative

____ 4. A line has *x*-intercept 2 and *y*-intercept 6? Determine the slope of the line.

a. $\frac{1}{3}$
b. 3
c. –3
d. $-\frac{1}{3}$

____ 5. Determine the slope of a line that is perpendicular to the line through W(–9, 7) and X(6, –10).

a. $-\frac{15}{17}$
b. $-\frac{17}{15}$
c. –15
d. $\frac{15}{17}$

____ 6. The slope of a line is $\frac{1}{7}$. What is the slope of a line that is parallel to this line?

a. 7
c. $\frac{2}{14}$
b. $\frac{14}{2}$
d. –7

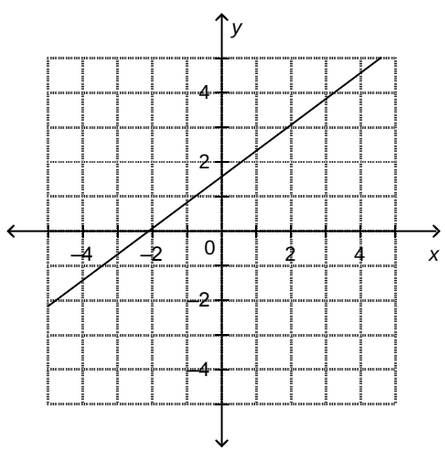
____ 7. Write an equation for the graph of a linear function that has slope $-\frac{1}{3}$ and *y*-intercept –3.

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

____ 8. For a service call, a plumber charges a $95 initial fee, plus $45 for each hour he works. Write an equation to represent the total cost, *C* dollars, for *t* hours of work.

a. $t = 45C + 95$
c. $C = 45t + 95$
b. $C = 95t + 45$
d. $C = 45t - 95$

____ 9. Determine the slope and *y*-intercept of this graph.



a. slope: $\frac{3}{4}$; *y*-intercept: 1.5
c. slope: $\frac{3}{4}$; *y*-intercept: –1.5
b. slope: 1.5; *y*-intercept: $\frac{3}{4}$
d. slope: $-\frac{3}{4}$; *y*-intercept: 1.5

____ 10. Which equations represent perpendicular lines?

a. $y = 6x - 7,\ y = 6x + 7$
c. $y = 11x - 7,\ y = 11x + \frac{1}{7}$
b. $y = -7x + 11,\ y = \frac{1}{7}x + 6$
d. $y = \frac{1}{6}x + 6,\ y = 6x + 6$

____ 11. Describe the graph of the linear function with this equation: $y + 3 = \frac{1}{3}(x - 2)$

a. The graph is a line through (–2, 3) with slope $\frac{1}{3}$.
b. The graph is a line through (2, -3) with slope $\frac{1}{3}$.
c. The graph is a line through (2, -3) with slope $-\frac{1}{3}$.
d. The graph is a line through (–2, 3) with slope $-\frac{1}{3}$.

____ 12. Write an equation for the graph of a linear function that has slope $\frac{2}{7}$ and passes through S(–4, 5).

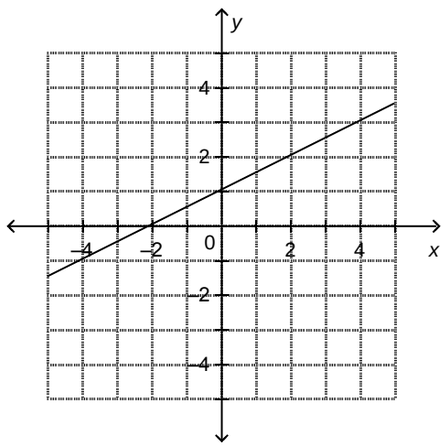
a. $y+5=\frac{2}{7}(x-4)$

b. $y-5=-\frac{2}{7}(x+4)$

c. $y-5=-\frac{7}{2}(x+4)$

d. $y-5=\frac{2}{7}(x+4)$

____ 13. Write an equation in slope-point form for this line.



a. $y-2=\frac{1}{2}(x-2)$

b. $y+2=-\frac{1}{2}(x+2)$

c. $y-2=-\frac{1}{2}(x-2)$

d. $y+2=\frac{1}{2}(x+2)$

____ 14. Write this equation in slope-intercept form: $y-3=-\frac{2}{7}(x+10)$

a. $y=\frac{2}{7}x+\frac{1}{7}$

b. $y=-\frac{2}{7}x+\frac{1}{7}$

c. $y=-7x+1$

d. $y=-\frac{1}{7}x+\frac{2}{7}$

____ 15. Determine the *y*-intercept of the graph of this equation: $y-3=4(x+5)$

a. 3

b. -23

c. 23

d. -20

____ 16. Write an equation in slope-point form for the line that passes through A(–2, 4) and B(–9, 6).

a. $y-6=-\frac{2}{7}(x+2)$

b. $y+4=-\frac{2}{7}(x-2)$

c. $y-4=-\frac{2}{7}(x+2)$

d. $y+6=\frac{2}{7}(x-2)$

____ 17. Write an equation for the line that passes through U(3, –7) and is perpendicular to the line $y=\frac{1}{7}x-9$.

a. $y+7=-\frac{1}{7}(x+3)$

b. $y-7=7(x+3)$

c. $y+7=-7(x-3)$

d. $y+7=7(x-3)$

____ 18. In which form is the equation $5x + 6y - 8 = 0$ written?

a. Standard form
b. Slope-intercept form
c. General form
d. Slope-point form

____ 19. Write this equation in general form: $y = -\frac{3}{2}x + 8$

a. $3x + 2y - 16 = 0$
b. $3x - 2y + 8 = 0$
c. $3x + 2y - 8 = 0$
d. $-3x - 2y - 16 = 0$

____ 20. Write this equation in general form: $y + 5 = \frac{5}{3}(x - 3)$

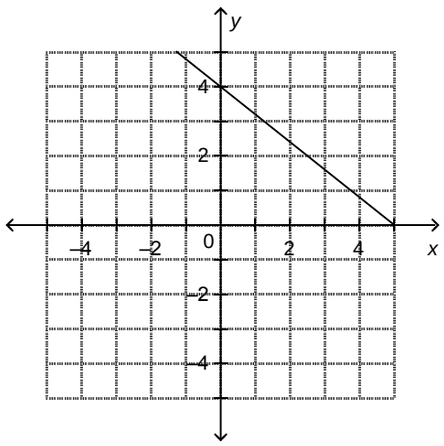
a. $5x - 3y = -8$
b. $5x - 3y - 8 = 0$
c. $5x - 3y - 30 = 0$
d. $5x + 3y - 30 = 0$

____ 21. Determine the *x*-intercept and the *y*-intercept for the graph of this equation: $2x - 3y + 36 = 0$

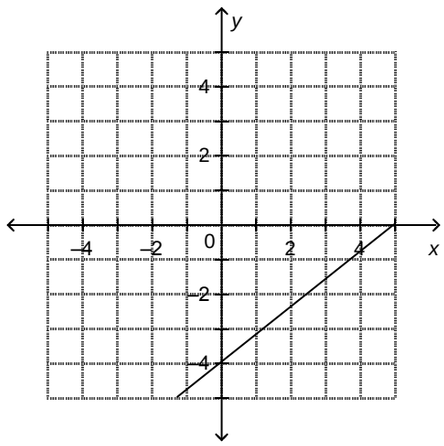
a. *x*-intercept: 18; *y*-intercept: 12
b. *x*-intercept: -18; *y*-intercept: -12
c. *x*-intercept: 18; *y*-intercept: -12
d. *x*-intercept: -18; *y*-intercept: 12

____ 22. Which graph represents the equation $4x - 5y - 20 = 0$?

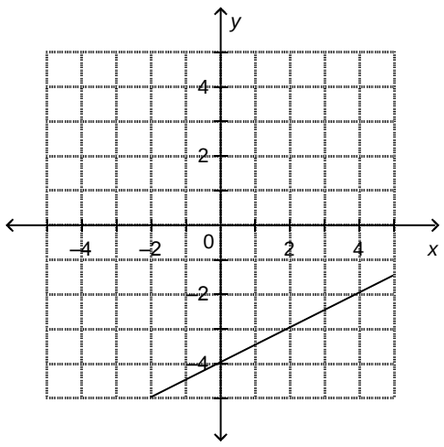
a.



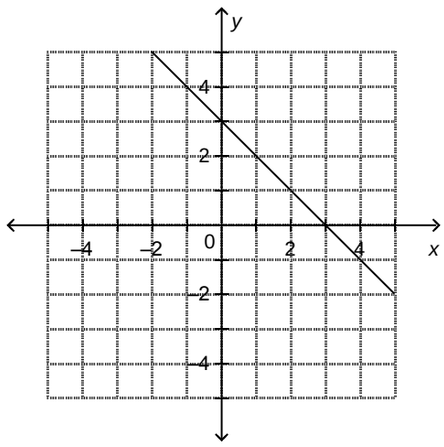
c.



b.



d.



____ 23. Determine the slope of the line with this equation: $7x + 3y + 5 = 0$

a. $-\frac{7}{3}$
b. $\frac{3}{7}$
c. $\frac{7}{3}$
d. $-\frac{3}{7}$

____ 24. Write this equation in slope-intercept form: $10x + 3y - 4 = 0$

a. $y = \frac{10}{3}x + \frac{4}{3}$
b. $y = -\frac{10}{3}x + \frac{4}{3}$
c. $y = \frac{10}{3}x - \frac{4}{3}$
d. $y = -\frac{10}{3}x - 4$

Short Answer

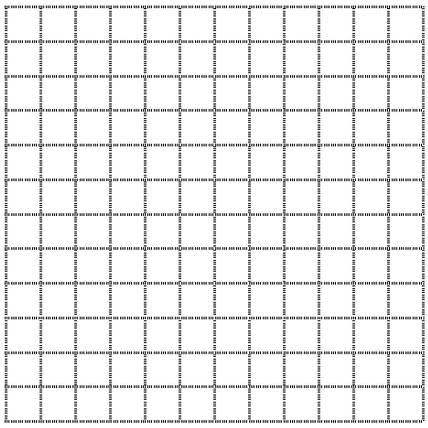
25. The coordinates of the endpoints of segments are given below. Are the two line segments parallel, perpendicular, or neither?
    a) R(–2, 8), S(–12, –4) and T(3, –1), U(9, 4)
    b) F(–7, –8), G(–4, 1) and V(–4, 10), W(14, 4)

26. Write this equation in general form: $y = \frac{9}{4}x - 7$

27. Write this equation in general form: $y - 5 = \frac{3}{5}(x + 5)$

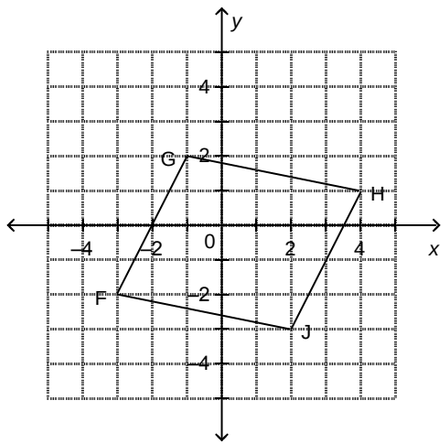
28. Determine the slope of the line of this equation: $9x + 5y - 13 = 0$

29. a) Determine the *x*- and *y*-intercepts of the graph of this equation: $5x + 8y + 40 = 0$
    b) Graph the equation.



Problem

30. Reggie says FGHJ is a parallelogram. Ann says FGHJ is a rectangle. Who is correct? Justify your answer.



31. Francine runs a T-shirt company. For each order she receives, Francine charges a flat fee of $50, plus $8.95 per T-shirt .
    a) Write an equation for the total cost, *C* dollars, for ordering *n* T-shirts.
    b) Marnell ordered 62 T-shirts. What was the total cost?
    c) Jakub paid a total cost of $971.85. How many T-shirts did he order?

32. What is the value of *k* such that the line passing through $(4, -5)$ and $(2, k)$ is parallel to the line $y = -4x + 3$?

33. Write the equation of the line in *slope y – intercept* form that passes through (–7, –9) and (–12, 11).

34. Determine the line in slope y – intercept form that passes through (8, –3) and is perpendicular to $y = -\frac{6}{7}x - 5$.

35. Suppose the grade or slope to a hill on the highway is a 4.5 ft rise for every 80 ft. horizontally.

    (a) What is the slope or grade of the hill?

    (b) If the hill has a change in elevation of 210 ft. then, use your answer from (a) to determine the horizontal change?

Math 1201 Chapter 6 Review
Answer Section
MULTIPLE CHOICE

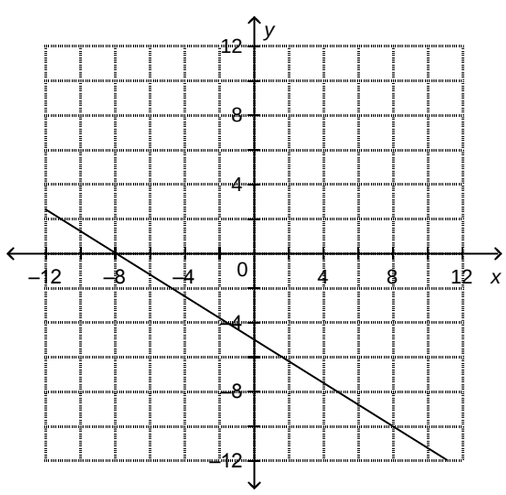
1.	ANS: B	7.	ANS: B	13.	ANS: A	19.	ANS: A
2.	ANS: D	8.	ANS: C	14.	ANS: B	20.	ANS: C
3.	ANS: C	9.	ANS: A	15.	ANS: C	21.	ANS: D
4.	ANS: C	10.	ANS: B	16.	ANS: C	22.	ANS: C
5.	ANS: D	11.	ANS: B	17.	ANS: C	23.	ANS: A
6.	ANS: C	12.	ANS: D	18.	ANS: C	24.	ANS: B

SHORT ANSWER

25. a) Neither b) Perpendicular 26. $9x - 4y - 28 = 0$ 27. $3x - 5y + 40 = 0$

28. $-\frac{9}{5}$ 29. a) *x*-intercept: –8 *y*-intercept: –5

29.b)



PROBLEM

30. A parallelogram has opposite sides equal.
To check whether FGHJ is a parallelogram, determine whether opposite sides are parallel.
Write the coordinates of the vertices:
F$(-3,-2)$, G$(-1,2)$, H$(4,1)$, J$(2,-3)$,

The slope of GH is $-\frac{1}{5}$. The slope of FJ is $-\frac{1}{5}$.

The slope of HJ is 2. The slope of GF is 2.

The slopes of opposite sides are equal, so FGHJ is a parallelogram.

A rectangle has angles that are right angles.
To check whether FGHJ is a rectangle, determine whether two intersecting sides are perpendicular.
Determine whether GF is perpendicular to GH.

The slope of GF is 2.

The slope of GH is $-\frac{1}{5}$.

Since the slopes of GF and GH are not negative reciprocals, GF and GH are not perpendicular.
This means that $\angle$FGH is not a right angle and that FGHJ is not a rectangle.

So, Reggie is correct.

31. a) The flat fee is: \$50. When *n* T-shirts are ordered, the additional cost is: 8.95*n* dollars
So, an equation is: $C = 8.95n + 50$

b) The total cost was \$604.90.
c) Jakub ordered 103 T-shirts.

32. k = 3 33. y = –4x – 37 34. $y = \frac{7}{6}x - \frac{37}{3}$

35.(a) $\frac{4.5}{80}$ (b) 3733.3 ft.