Student: yaser almohaws **Date:** 1/1/15 **Time:** 11:14 AM	**Instructor:** fahad aljabr **Course:** MATH-001: Fundamentals of Math 11415 **Book:** Bittinger: Introductory and Intermediate Algebra, 4e	**Assignment:** Week 9 Practice Exercises

1. Find the slope-intercept equation of the line that has the given characteristics.

   Slope -2 and y-intercept $(0,3)$

   The equation is $y = -2x + 3$.
   (Simplify your answer. Type your answer in slope-intercept form.)

2. Find the linear function, $f(x) = mx + b$, whose graph has the given slope and y-intercept.

   Slope is $-\frac{11}{7}$ and y-intercept is $(0, -2)$.

   The linear function is $f(x) = -\frac{11}{7}x - 2$.

3. Find an equation of the line with slope 7 and containing the point $(-4, -7)$.

   The equation of the line is $y = 7x + 21$.

4. Find an equation of the line having the given slope and containing the given point.

   $m = \frac{6}{7}, (2, -3)$

   The equation of the line is $y = \frac{6}{7}x - \frac{33}{7}$.
   (Type an expression using x as the variable. Simplify your answer. Use integers or fractions for any numbers in the expression.)

5. Find an equation of the line containing the given pair of points.

   $(2,3)$ and $(6,5)$

   $y = \frac{1}{2}x + 2$
   (Simplify your answer. Type your answer in slope-intercept form. Use integers or fractions for any numbers in the expression.)

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6. Find an equation of the line that contains the following pair of points.

$(-4,-7)$ and $(-12,-21)$

The equation of the line is $y = \frac{7}{4}x$.

(Use integers or fractions for any numbers in the expression.)

7. Find an equation of the line containing the given pair of points. Express your answer in the form $x = a$, $y = b$, or $y = mx + b$.

$(0,0)$ and $(5,8)$

What is an equation of the line?

$y = \frac{8}{5}x$

(Use integers or fractions for any numbers in the expression.)

8. Write an equation of the line containing the given point and parallel to the given line. Express your answer in the form $y = mx + b$.

$(8,9)$; $x + 4y = 7$

The equation of the line is $y = -\frac{1}{4}x + 11$.

(Type an equation. Type your answer in slope-intercept form. Use integers or fractions for any numbers in the equation. Simplify your answer.)

9. Write an equation of the line containing the given point and parallel to the given line. Express your answer in the form $y = mx + b$.

$(-8,5)$; $5x = 4y + 9$

The equation of the line is $y = \frac{5}{4}x + 15$.

(Simplify your answer. Use integers or fractions for any numbers in the expression.)

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10. Write an equation of the line containing the given point and perpendicular to the given line. Express your answer in the form $y = mx + b$.

$(5,6)$; $6x + y = 3$

The equation of the line is $y = \frac{1}{6}x + \frac{31}{6}$.

(Simplify your answer. Use integers or fractions for any numbers in the expression.)

11. Write an equation of the line containing the given point and perpendicular to the given line.

$(7, -9)$; $7x + 8y = 5$

The equation of the line is $y = \frac{8}{7}x - 17$.

(Simplify your answer. Type your answer in slope-intercept form. Use integers or fractions for any numbers in the expression.)

12. Media Services charges \$30 for a phone and \$20/month for its economy plan.

Find a model that determines the total cost, C(t), of operating a Media Services phone for t months.

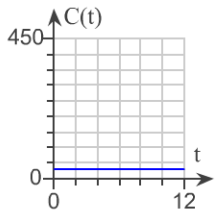
$C(t) = 20t + 30$

Use the model to find the total cost for 4 months of service.

Total cost = \$ 110

Choose the correct graph of C(t).

A.



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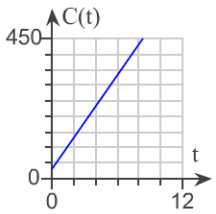

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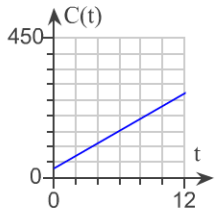

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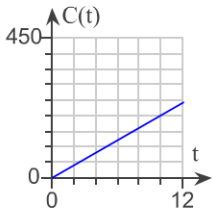

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13. High Tech Graphics bought a fax machine for $750. The fax machine depreciates at a rate of $25 a month.

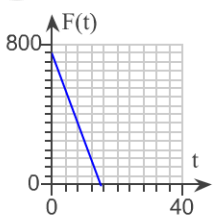
(a) Find a function F that can be used to determine the value of the fax machine t months after purchase.

Complete the model below.

F(t) = $-25t+750$

(b) Choose the correct graph of the function F(t).

A.



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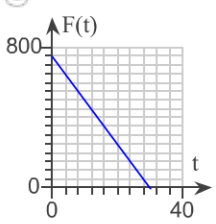

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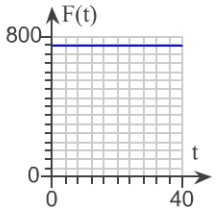

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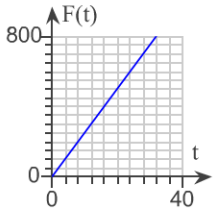

14. The table lists data regarding the average salaries of several professional athletes in the years 1991 and 2001.
a) Use the data points to find a linear function that fits the data.
b) Use the function to predict the average salary in 2005 and 2010.

Year	Average Salary
1991	$264,000
2001	$1,420,000

A linear function that fits the data is S(x) = $115600x + 148400$.
(Let x = the number of years since 1990, and let S = the average salary x years from 1990.)

The predicted average salary for 2005 is $ 1882400 .
(Round to the nearest whole number.)

The predicted avarage salary for 2010 is $ 2460400 .
(Round to the nearest whole number.)

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15. In 1920, the record for a certain race was 45.7 sec. In 1990, it was 44.3 sec.
Let R(t) = the record in the race and t = the number of years since 1920.

a) Find a linear function that fits the data.
b) Use the function in (a) to predict the record in 2003 and in 2006.
c) Find the year when the record will be 43.70 sec.

Find a linear function that fits the data.

R(t) = $-0.02t + 45.7$
(Round to the nearest hundredth.)

What is the predicted record for 2003? 44.04 sec
(Round to the nearest hundredth.)

What is the predicted record for 2006? 43.98 sec
(Round to the nearest hundredth.)

In what year will the predicted record be 43.70 seconds? 2020
(Round to the nearest year.)

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16. Solve the system of equations by graphing. Then classify the system.

$4x - y = 9$
$4x + 5y = 3$

What is the solution of the system? Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. The solution is $(2, -1)$. (Type an ordered pair.)
- B. There are infinitely many solutions.
- C. There is no solution.

Is the system consistent or inconsistent?

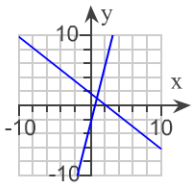
- consistent
- inconsistent

Are the equations dependent or independent?

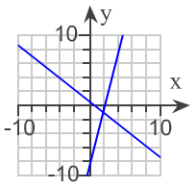
- dependent
- independent

Choose the correct graph below.

A.



B.



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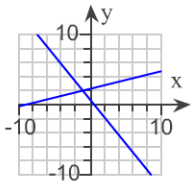

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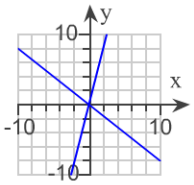

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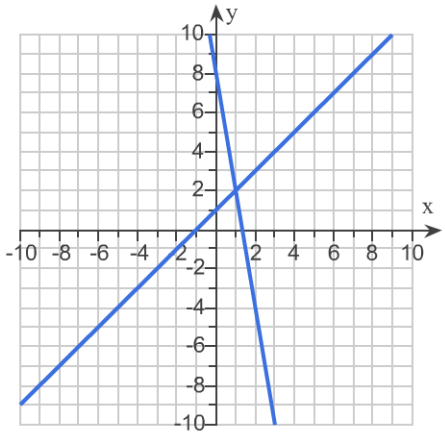
17. Solve the system of functions by graphing. Then classify the system.

$f(x) = x + 1$
$g(x) = -6x + 8$

Use the graphing tool to graph the system.



What is the solution of the system? Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. The solution is $(1,2)$.
  (Type an ordered pair.)
- B. There are infinitely many solutions.
- C. There is no solution.

Is the system consistent or inconsistent?

- Inconsistent
- Consistent

Are the equations dependent or independent?

- Dependent
- Independent

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18. Solve the system of equations by graphing. Then classify the system.

$3x - 9y = 45$
$2x - 6y = -16$

What is the solution of the system? Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. The solution is ____. (Type an ordered pair.)
- B. There are infinitely many solutions.
- C. There is no solution.

Is the system consistent or inconsistent?

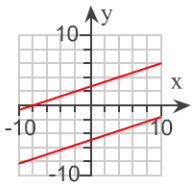
- consistent
- inconsistent

Are the equations dependent or independent?

- independent
- dependent

Choose the correct graph below.

A.



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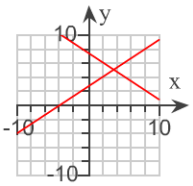
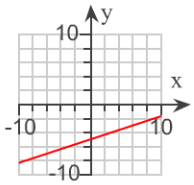


C.



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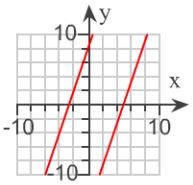

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19. Solve the system of equations by graphing. Then classify the system.

$8x - 5y = -35$
$5y - 8x = 35$

What is the solution of the system? Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. The solution is ____.
  (Type an ordered pair.)
- B. There are infinitely many solutions.
- C. There is no solution.

Is the system consistent or inconsistent?

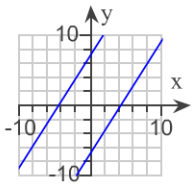
- Inconsistent
- Consistent

Are the equations dependent or independent?

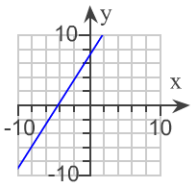
- Dependent
- Independent

Choose the correct graph below.

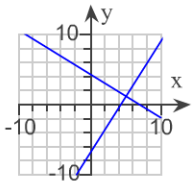
A.



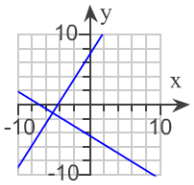
B.



C.



D.



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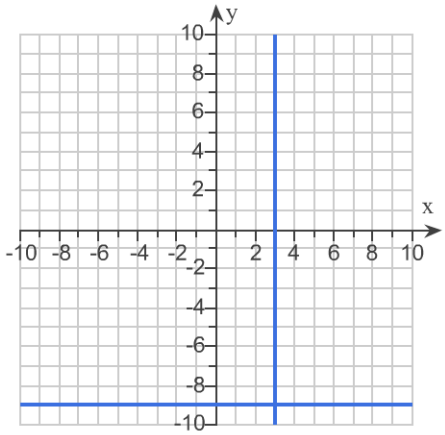
20. Solve the system of equations by graphing. Then classify the system.

$x = 3$
$y = -9$

Use the graphing tool to graph the system.



What is the solution of the system? Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. The solution is $(3, -9)$. (Type an ordered pair.)
- B. There are infinitely many solutions.
- C. There is no solution.

Is the system consistent or inconsistent?

- Inconsistent
- Consistent

Are the equations dependent or independent?

- Dependent
- Independent

21. Solve the given system by the substitution method.

$$4x + y = 19$$
$$7x - 3y = 19$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. The solution is $(4,3)$. (Type an ordered pair.)
- B. There are infinitely many solutions.
- C. There is no solution.

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22. Solve using the substitution method.

$$\begin{aligned} -7x + y &= 58 \\ 3x + 17y &= 10 \end{aligned}$$

Select the correct choice below and fill in any answer boxes in your choice.

- A. The solution is $(-8,2)$.
  (Simplify your answer. Use integers or fractions for any numbers in the expression. Type an ordered pair.)
- B. There are infinitely many solutions.
- C. There is no solution.

23. The plans for a shed call for a rectangular floor with a perimeter of 304 ft. The length is three times the width. Find the length and width.

The width is 38 ft. The length is 114 ft.

24. Hockey teams receive 2 points when they win and 1 point when they tie. One season, a team won a championship with 48 points. They won 9 more games than they tied. How many wins and how many ties did the team have?

How many wins did the team have?
19

How many ties did the team have?
10

25. Solve the following system of equations by the elimination method.

$$\begin{aligned} 9x + 3y &= -12 \\ 3x - y &= -2 \end{aligned}$$

What is the solution of the system? Select the correct choice below, and fill in the answer box if necessary.

- A. The solution is $(-1,-1)$.
  (Type an ordered pair. Use integers or fractions for any numbers in the expression.)
- B. There are infinitely many solutions.
- C. There is no solution.

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26. Solve by the elimination method.

$4x + 5y = 5$

$8x + 10y = 10$

What is the solution of the system? Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. The solution is ____.
  (Simplify your answer. Type an ordered pair. Use integers or fractions for any numbers in the expression.)
- ✔ B. There are infinitely many solutions.
- C. There is no solution.

27. Solve by the elimination method.

$4x - 8y = 5$
$4x - 8y = 6$

What is the solution of the system? Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. The solution is ____.
  (Simplify your answer. Type an ordered pair. Use integers or fractions for any numbers in the expression.)
- B. There are infinitely many solutions.
- ✔ C. There is no solution.

28. Solve the following system of equations by the elimination method.

$$\frac{1}{3}x + \frac{1}{2}y = 6$$
$$\frac{2}{3}x - \frac{5}{2}y = -16$$

What is the solution of the system? Select the correct choice below, and fill in the answer box if necessary.

- ✔ A. The solution is $(6,8)$.
  (Type an ordered pair. Use integers or fractions for any numbers in the expression.)
- B. There are infinitely many solutions.
- C. There is no solution.

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29. Solve by the elimination method.

$$0.19x + 0.12y = 1.16$$
$$0.5x - 0.8y = 6.4$$

Determine the solution of the system. Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. The solution is $(8, -3)$. (Type an ordered pair.)
- B. There are infinitely many solutions.
- C. There is no solution.

30. Solve using any appropriate method.

$$0.05x + 0.25y = 99$$
$$0.15x + 0.05y = 108$$

Select the correct choice below and fill in any answer boxes in your choice.

- A. The solution is $(630,270)$. (Simplify your answer. Use integers or fractions for any numbers in the expression. Type an ordered pair.)
- B. There are infinitely many solutions.
- C. There is no solution.