Name: _

1. Simplify each expression.

A. $w^9 \cdot w^3$	B. $x^{-5} \cdot x^7$	C. $7^8 \cdot 7^3 \cdot 7^{-2}$	D. $x^{-5} \cdot x^{-4} \cdot x$
E. $\dfrac{m^7}{m^4}$	F. $\dfrac{v^{-3}}{v}$	G. $\dfrac{3^6}{3^{-4}}$	H. $\dfrac{p^{-7}}{p^2}$
I. $(5^3)^7$	J. $(x^{-2})^6$	K. $(m^{-4})^{-10}$	L. $(19^9)^{-5}$
M. $\dfrac{m^6 \cdot m^4}{m^7}$	N. $\dfrac{x^3}{x^2 \cdot x^5}$	O. $\dfrac{c^5 \cdot c^{-1}}{c \cdot c^3}$	P. $\dfrac{v^8 \cdot v^{-2}}{v^4 \cdot v^3}$

2. Simplify the algebraic expressions.

A. $7(m-3)+4(m+5)$	B. $2m^2 - 5n^2 + 6n^2 - 8m$
C. $10(n^2 + n) - 6(n^2 - 2)$	D. $y^2 + 2y + 3y^2$

3. Solve each equation.

A. $6m - 3 = 21$	B. $3 = 2p + 5$	C. $1 = \frac{1}{3}a - 5$
D. $5b - 4 = 2b + 8$	E. $2c + 14 = 6 - 4c$	F. $3(x + 5) = 3x + 15$
G. $\frac{1}{2}x + 4 = \frac{-2}{3}x + \frac{1}{2}$	H. $-2(4 - 3x) + 7 = 6(x + 1)$	
I. $3(2x - 5) - x = -7(x + 3)$	J. $2(-x - 4) + 3 = -7x + 5 + 5x$	

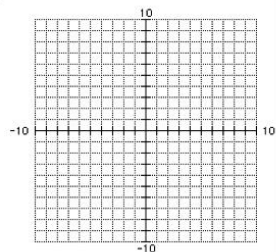**4. Find the slope of the line that passes through the two points.**

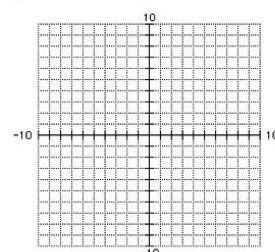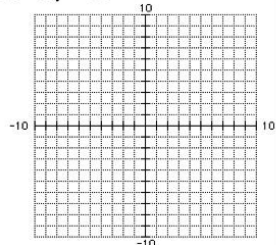|		
A. (2,-4) (4,-1)	B. (-3,6) (-7,3)	C. (4,4) (4,9)

5. Graph the equation.
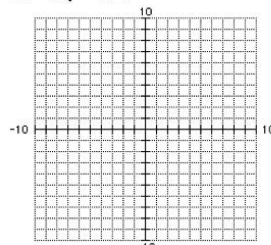
A. $y = -x + 2$

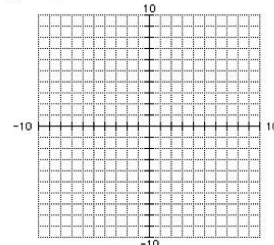B. $y = \frac{2}{5}x + 4$
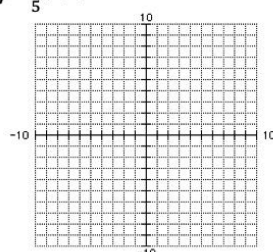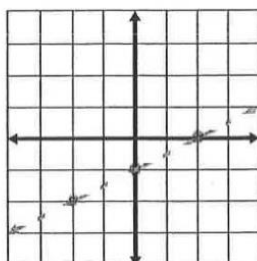
C. $y = 2$

D. $5x + 2y = 10$

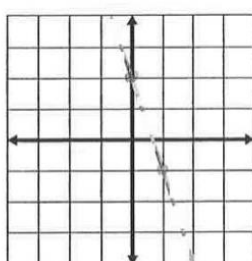E. $3x - 2y = 12$

F. $x = -3$

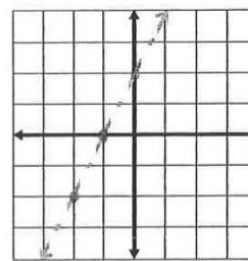**6. Write an equation in slope-intercept form to represent the line.**

A.

B.

C.

7. Write the equation of a line in slope intercept form that passes through the two points.

A. (-1,3) and (2,9)

B. (4,-1) and (6,-7)

C. (-5,-2) and (-3,8)

8. Evaluate the following expressions given the functions below:

$$f(x) = x^2 + 7 \qquad g(x) = -3x + 1 \qquad h(x) = \frac{12}{x} \qquad j(x) = 2x + 9$$

A. g(10) =	B. f(3) =	C. h(-2) =
D. j(7) =	E. Find x if g(x) = 16	F. Find x if h(x) = -2
G. Find x if f(x) = 23	H. Challenge: g(b + c) =	I. Challenge: f(h(x)) =

9. Translate the following into ordered pairs.

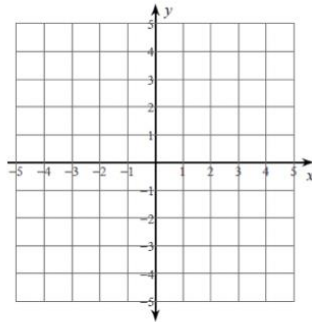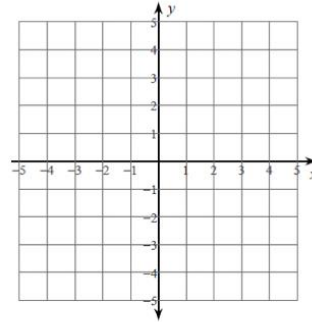| A. f(-1) = 1 (,)	B. h(2) = 7 (,)	C. g(1) = -1 (,)
D. f(3) = 5 (,)	E. h(-3) = 4 (,)	F. k(4) = 8 (,)

10. Solve the following systems by graphing.
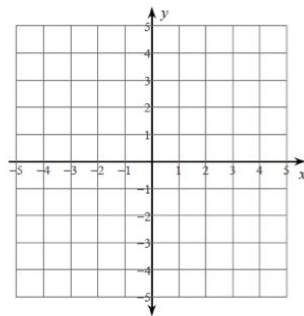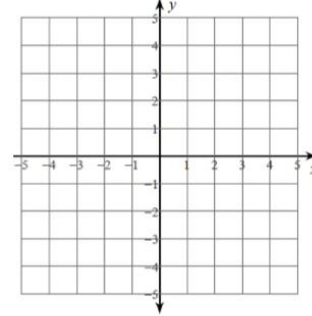
A.
$$y = \frac{1}{3}x - 3$$
$$y = -x + 1$$

B.
$$y = \frac{5}{2}x + 4$$
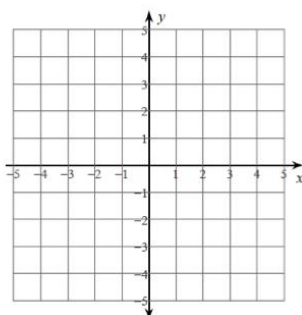$$y = -1$$

C.
$$y = -\frac{1}{2}x - 2$$
$$y - 2 = -\frac{3}{2}x$$

D.
$$y + \frac{1}{2}x = -1$$
$$y = \frac{1}{4}x - 4$$

E.
$$y - \frac{3}{4}x = 2$$
$$y - 2 = \frac{3}{4}x$$

F.
$$y + 4 = 3x$$
$$y - 3 = -\frac{1}{2}x$$
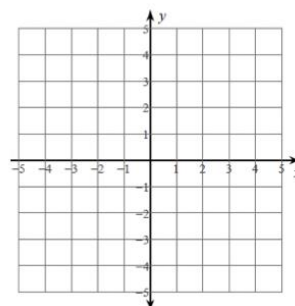
11. Solve the following systems using elimination.

A.
-4x − 2y = -12
4x + 8y = -24

B.
x − y = 11
2x + y = 19

C.
x + 3y = -6
5x − 6y = -23

D.
4x + 4y = 0
-x − 2y = 4

E.
-7x + y = -19
-2x + 3y = -19

F.
-3x + 7y = -16
-9x + 5y = 16

12. Solve the following systems using substitution.

A.
$$x + 4y = 0$$
$$-5x + 2y = 22$$

B.
$$3x + y = -3$$
$$-3x - y = 4$$

C. $y = -2x + 1$ $y = x + 4$	D. $-x - 7y = -3$ $3x + 21y = -4$
E. $x + 4y = 9$ $-5x + 7y = -18$	F. $4x - 4y = 4$ $6x - 5y = -2$

13. Write <u>and</u> solve a system of equations for each situation. Use any method to sovle the systems.

A. Your school sold 456 tickets for the high school play. An adult ticket costs $3.50 and a student costs $1.00. The total ticket sales was $1131. How many adult tickets and how many student tickets did they sell? Set up a system to solve.

B. A landscaping company placed two orders with a nursery. The first order was for 13 bushes and 4 trees, and totaled $487. The second order was for 6 bushes and 2 trees, and totaled $232. The bill does not list the per-item price. What is the cost of one bush and of one tree?

C. The treasurer of the student body at a college reported that the receipts from a recent concert totaled $916. Furthermore, he announced that 560 people had attended the concert. Students were charged $1.25 each for admission to the concert, and adults were charged $2.25 each. How many adults attended the concert?

14. Solve each proportion.

A. $\dfrac{2}{3} = \dfrac{6}{x-4}$	B. $\dfrac{3}{10} = \dfrac{m+7}{20}$	C. $\dfrac{x-1}{3} = \dfrac{x+1}{5}$
D. $\dfrac{w}{3} = \dfrac{w+4}{7}$	E. $\dfrac{5}{2n} = \dfrac{8}{3n-24}$	F. $\dfrac{5x-3}{-2} = \dfrac{x+3}{2}$