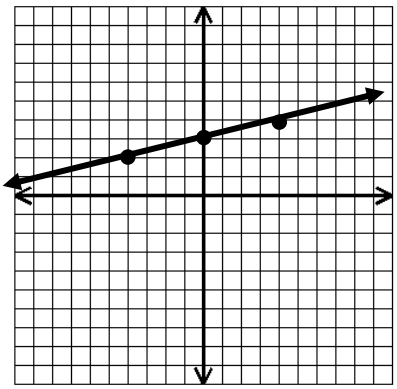
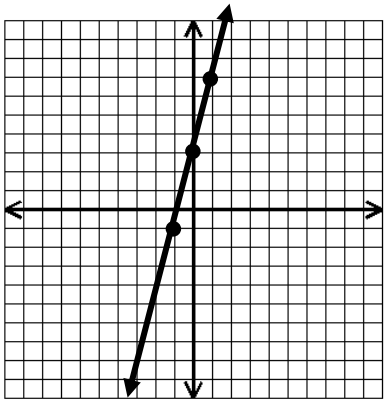
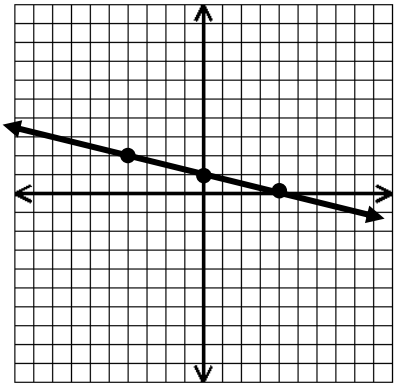
NAME_____**DATE**_____**PER.**_____

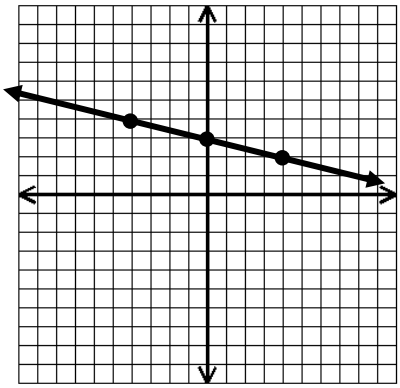
REVIEW: POLYNOMIALS & FACTORING

_____1. Which graph represents the equation x + 4y = 12?

A. 

C. 

B. 

D. 

_____2. A group of students are going on a field trip. If the students take 3 vans and 1 car, they can transport 22 people. If they take 2 vans and 4 cars, they can transport 28 people. Which system of equations can be used to find *c*, the number of people that can fit in each car, and *v*, the number of people that can fit in each van?

A. $3v = 22$
$2v + 4c = 28$

B. $3v + c = 22$
$2v + 4c = 28$

C. $3v + 2c = 22$
$v + 4c = 28$

D. $v + 4c = 22$
$3v + 2c = 28$

_____3. Find the x- and y-intercepts of 8x – 12y = -24.

A. x-intercept: (-3, 0)
y-intercept: (0, 2)

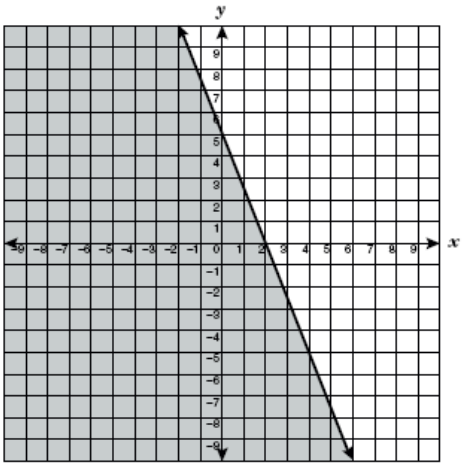
C. x-intercept: (2, 0)
y-intercept: (0, -3)

B. x-intercept: (0, -3)
y-intercept: (2, 0)

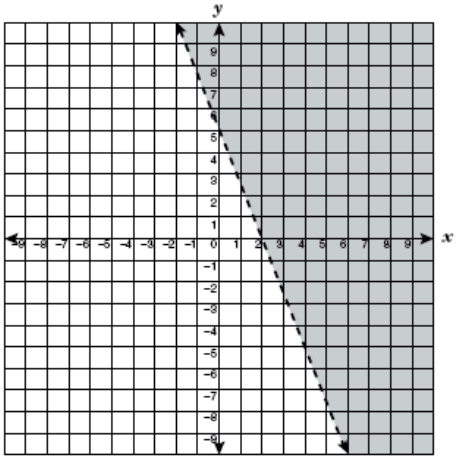
D. x-intercept: (0, 2)
y-intercept: (-3, 0)

_____4. Which graph best represents the solution set of $5x + 2y \leq 10$?

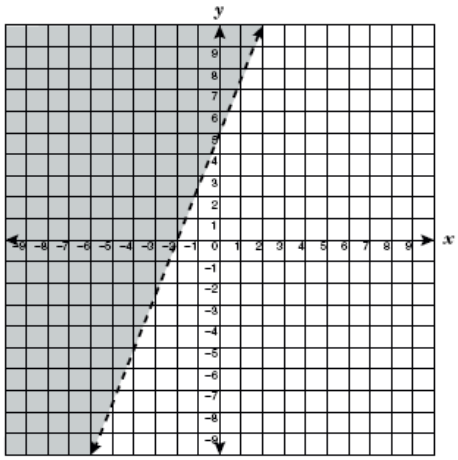
A.



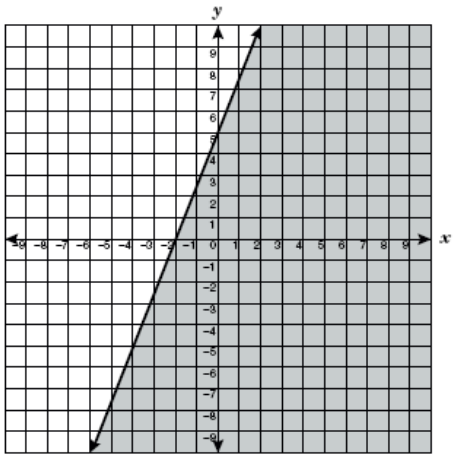
C.



B.



D.



_____5. What is the x-coordinate of the solution to the following system?

$$7x + 15y = 32$$
$$x - 3y = 20$$

A. 11

C. -34

B. -3

D. 4

_____6. Which function represents the line that contains the point (3, -2) and has a slope of 5?

A. $y = 5x - 2$

C. $y = 5x - 17$

B. $y = 5x + 3$

D. $y = 5x + 12$

_____7. What is the relationship between the lines $2x + 4y = 12$ and $3x + 6y = -12$?

A. The graphs are two perpendicular lines.

B. The graphs are two parallel lines.

C. The graphs have the same y-intercept.

D. The graphs have the same x-intercept.

_____8. Solve for x: $2(3x + 2) – 4(x – 7) = 8(2x – 3)$

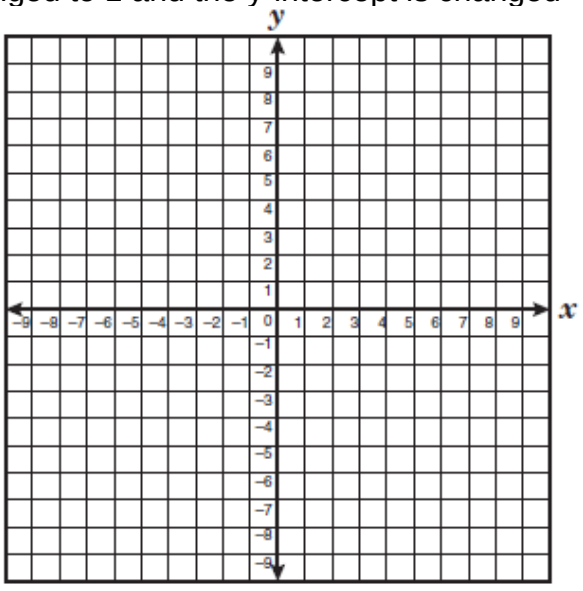
A. $x = -2$

B. $x = 4$

C. $x = \frac{6}{7}$

D. $x = 0$

_____9. If the slope of the equation $y = -2x + 6$ is changed to 1 and the y-intercept is changed to (0, -3), which statement best describes this situation?



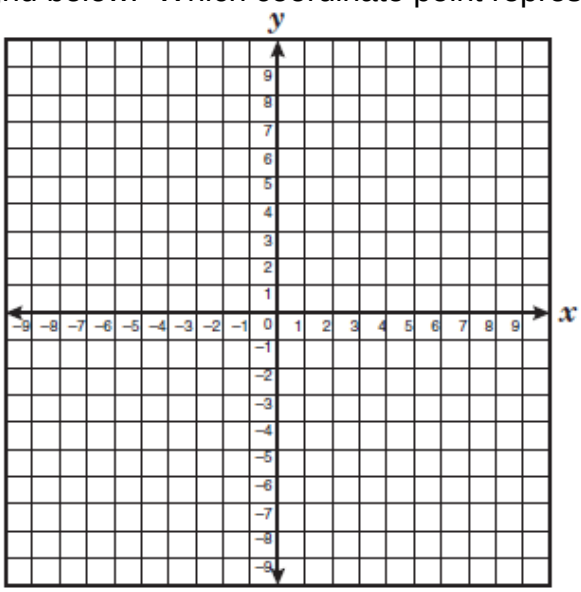
A. The new line is perpendicular to the original line.

B. The new line is parallel to the original line.

C. The new line and the original line have the same y-intercept.

D. The new line and the original line have the same x-intercept.

10. Graph y < x + 4 on the grid below. Which coordinate point represents a solution of this inequality?



A. (-7, 0) B. (-1, 3) C. (3, 9) D. (2, -4)

11. For the line $y = mx + b$, where $m < 0$ and $b > 0$, what change would occur if m is multiplied by -2 and b remains the same?

A. The y-intercept would become negative.

B. The slope would become positive.

C. The resulting line would be parallel to the original line.

D. The resulting line would be perpendicular to the original line.

12. Each of the following tables contains elements of an (x, y) relationship. Which table contains four points that cannot lie on the graph of a function of x?

A.

x	1	2	3	4
y	-1	-2	-3	-4

B.

x	-2	0	-4	5
y	3	3	3	3

C.

x	0	4	6	10
y	-1	5	-1	3

D.

x	1	2	3	1
y	3	4	5	6

13. Write the equation of a line that is perpendicular to y = 5x + 4 and goes through (15, -7).

Simplify each expression.

14. $-3(x - 4) + x(2x + 3)$	15. $2(x - 4) - 3x(x - 5)$	16. $4(x^2 - 4x + 6) - 2x(x - 5)$
17. Find the product of $(x + 8)(x - 3)$	18. Multiply $(5x + 1)(4x - 3)$	19. Find the product of $(5x - 2)(5x + 2)$.

Find each of the following.

20. The perimeter of a triangle is $8x^2 - 2x + 6$. If two sides of the triangle are $x^2 - x$ and $4x + 3$, what is the length of the missing side in terms of x?
21. What would be the area of a rectangle that has a length of $6x + 3$ and a width of $2x - 4$?

Factor completely.

22. $x^2 - 4x - 32 =$_____	23. $3x^3 + 24x^2 + 21x =$_____

24. $x^2 + 11x - 42 =$_____	25. $6x^2 - 54x - 78 =$_____
26. Find the expression that represents $5x^2 - 80$ in factored form.	27. How is $x^2 - 2x + 1$ expressed as the product of two binomials?
28. What are the factors of $x^2 + 20x + 96$?	29. Factor the binomial: $5x^2 + 180$
30. Factor completely: $2x^3 + 6x^2 - 36x$	31. Factor completely: $x^2 + 22x + 121$

32. Which expression below is equivalent to $x^2 - 2x - 35$? A. $(x + 7)(x - 5)$ B. $(x - 7)(x - 5)$ C. $(x + 7)(x + 5)$ D. $(x - 7)(x + 5)$ E. None of these.	33. Identify the factored form of $x^2 - 144$.
34. Which of the following shows $3x^2 + 2x - 5$ in factored form? A. $(x + 1)(3x + 5)$ B. $(x + 1)(3x - 5)$ C. $(x - 1)(3x - 5)$ D. $(x - 1)(3x + 5)$	35. Write $49x^2 - 16$ as the product of two binomials.

Answers in random order:

$x^2 + 5x - 24$	$20x^2 - 11x - 3$	$(x + 4)(x - 8)$	$3x(x + 1)(x + 7)$	A	B	D
$25x^2 - 4$	$y = -\frac{1}{5}x - 4$	$6(x^2 - 9x - 13)$	$(x + 11)(x + 11)$	A	B	D
$12x^2 - 18x - 12$	$-3x^2 + 17x - 8$	$(x - 1)(x - 1)$	$5(x + 4)(x - 4)$	A	C	D
$2x^2 - 6x + 24$	$7x^2 - 5x + 3$	$2x(x + 6)(x - 3)$	$(x + 14)(x - 3)$	B	D	D
$2x^2 + 12$	$5(x^2 + 36)$	$(x + 8)(x + 12)$	$(x - 12)(x + 12)$	B	D	
$(7x + 4)(7x - 4)$	**Study, study, study! Good luck, and do your best!**					