# ALGEBRA 1
Semester 1
Practice

# FINAL EXAM

DO NOT WRITE ON THIS TEST.
NO CALCULATORS ARE TO BE USED ON THIS TEST.

1) What is the opposite (additive inverse) of -8y?

A) $\dfrac{1}{8y}$ B) $-\dfrac{1}{8y}$ C) $-8y$ D) $8y$

2) What is the solution to the equation $\dfrac{64}{7}x = 8$?

A) $x = \dfrac{7}{8}$ B) $x = \dfrac{8}{7}$ C) $x = -\dfrac{7}{8}$ D) $x = -\dfrac{8}{7}$

3) Evaluate y^4 for y = -2.

A) -8 B) 8 C) 16 D) -16

4) What is the simplified form of $3y + 5 - (-8y) + (-11)$?

A) 5y - 6 B) 11y + 16 C) 11y - 6 D) -5y - 16

5) Which equation is equivalent to $3x - 4(x - 4) = 12$?

A) $3x - 4x - 4 = 12$ B) $3x + 4x + 4 = 12$

C) $3x - 4x - 16 = 12$ D) $3x - 4x + 16 = 12$

6) What is the solution to the equation $6(2h - 7) = 3(5h - 4)$?

A) h = -10 B) h = -11 C) h = 10 D) h = 11

7) Given (6, 10) and (3, 4), what is the y-intercept of the line through the points?

A) b = 0 B) b = -4 C) b = -1 D) b = -2

8)   Which ordered pair is a solution of the equation: $y = -2x + 1$?

A) $(-2, 3)$ B) $(-3, 5)$ C) $(-2, 5)$ D) $(3, 7)$

9)   Which is the first **incorrect** step in the solution shown below?

Solve: $3(x + 1) - 4 = 2$

Step 1: $3x + 3 - 4 = 2$

Step 2: $3x + 1 = 2$

Step 3: $3x = 1$

Step 4: $x = 1/3$

A)   Step 1   B)   Step 2   C)   Step 3   D)   Step 4

10)   What is the solution to the inequality $8 - 2x < 12$?

A) $x < 2$ B) $x < 20$ C) $x > -2$ D) $x > -20$

11)   Evaluate $-x^2$ for $x = 4$.

A)   -8   B)   16   C)   8   D)   -16

12)   Which inequality is equivalent to $6x - 8 > 4x + 3$?

A) $-2x < -5$ B) $2x > 11$ C) $-2x > -11$ D) $2x < 5$

13)   If your cell phone plan costs $30 each month and $0.20 per minute, which equation would determine how many minutes you used in April if your total bill was $45.60?

A) $0.20m + 45.60 = 30$ B) $0.20m + 30 = 45.60$

C) $30.20m = 45.60$ D) $0.20 + 30m = 45.60$

14)   What is the x-intercept for the equation $5x + 3y = -15$?

A) $(0, -3)$ B) $(-3, 0)$ C) $(-5, 0)$ D) $(0, -5)$

15) Which line is the graph of 6x + 4y = 12?

A)

B)

C)

D)
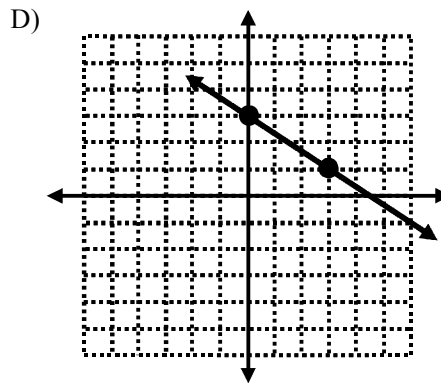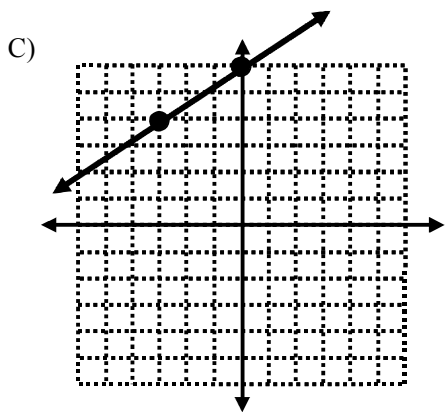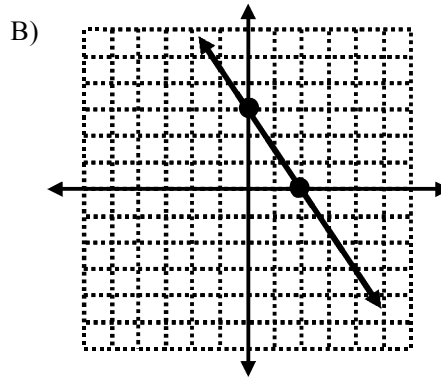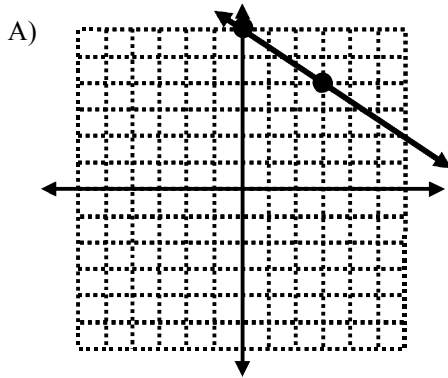
16) What is the slope and y-intercept of the line 3x + 5y = 8 ?

A)   slope = $-\dfrac{3}{5}$, y-intercept = 8

B)   slope = $\dfrac{3}{5}$, y-intercept = 7

C)   slope = $-\dfrac{3}{5}$, y-intercept = $\dfrac{8}{5}$

D)   slope = $\dfrac{3}{5}$, y-intercept = $\dfrac{8}{5}$

17) What is the solution to the system of equations?
9x – 3y = 6
–3x + y = –2

A)   Infinite Solutions

B)   No Solution

C)   (0, -2)

D)   (1, 1)

18) There were 422 people at a play. Admission for adults was $6 and $3 for children. The receipts were $1656. Which system below would be used to discover how many adults, A, and how many children, C, attended the play?
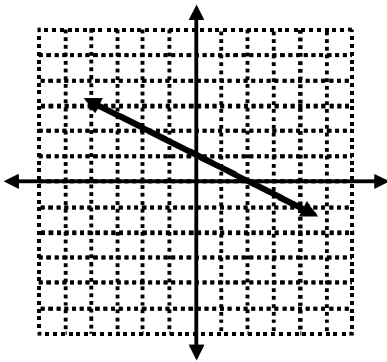
A)   6A + 3C = 422
      A + C = 1656

B)   A + C = 422
     6A + 3C = 1656

C)   A + C = 422
     6A + 3C = 1656(422)

D)   A + C = 422
     3A + 6C = 1656

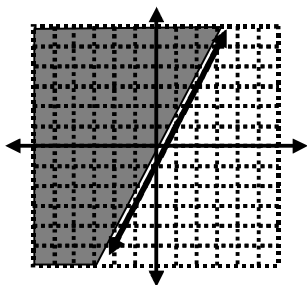19) What is the x -intercept of the graph?

A)   x-intercept = –3

B)   x-intercept = 2
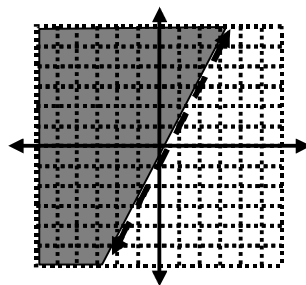
C)   x-intercept = 3

D)   x-intercept = –2

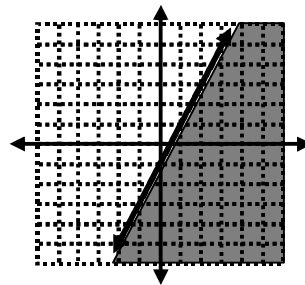20) Which of the following graphs is represented by the inequality $y \geq 2x - 1$?
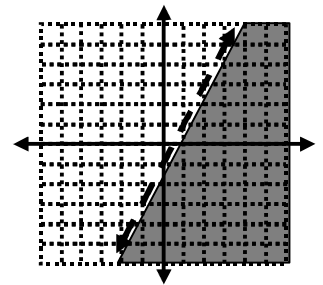
A)

B)

C)

D)

21) Which equation represents the line through the point (2, 5) with a slope of $\dfrac{3}{2}$?
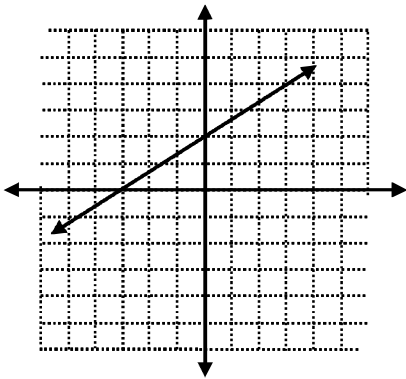
A) $y = \dfrac{3}{2}x + 2$

B) $y = \dfrac{3}{2}x + 5$

C) $y = \dfrac{3}{2}x - 2$

D) $y = \dfrac{3}{2}x - 5$

22) Which equation represents the graph shown below?

A) $y = x + 2$

B) $y = -x + 2$

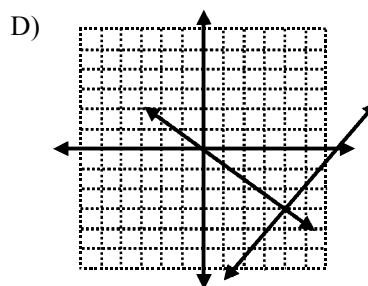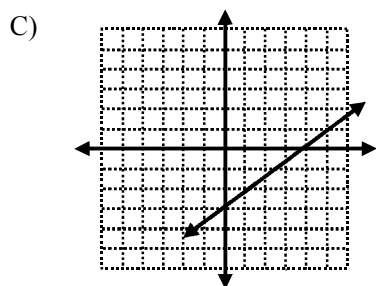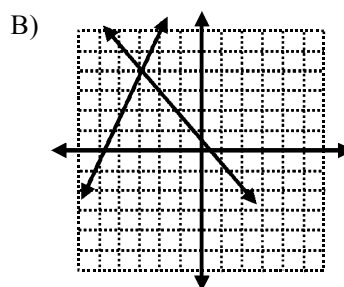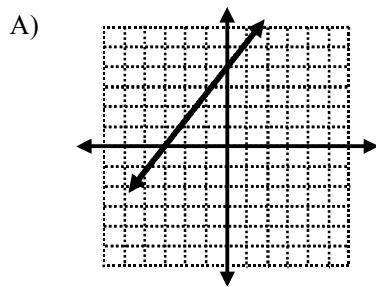C) $y = -\dfrac{2}{3}x + 2$

D) $y = \dfrac{2}{3}x + 2$

23) Which description below best represents the lines $y = \dfrac{-2}{3}x + 3$ and $y = \dfrac{-2}{3}x + 5$?

A) Parallel
B) Perpendicular

C) Same Line
D) Intersecting (not perpendicular)

24) What is the value of y in the solution of the system of equations? $y = 4x + 9$
$2x + 3y = 13$

A) $y = -1$ B) $y = 1$ C) $y = 5$ D) $y = -5$

25) If (4, -3) is a solution to a system of equations, which graph best represents that system?
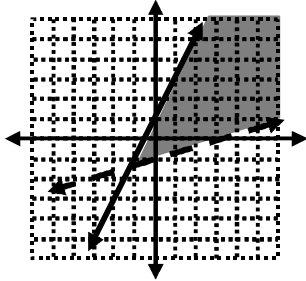
A)

B)

C)

D)

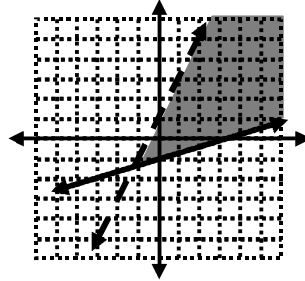26) Which graph represents the solution to the system of inequalities?

$$y \leq 2x + 1$$
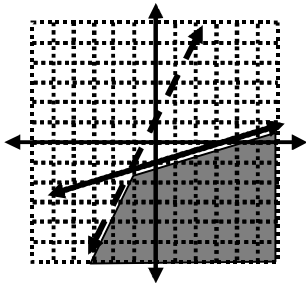
$$y > \frac{1}{3}x - 1$$

A)
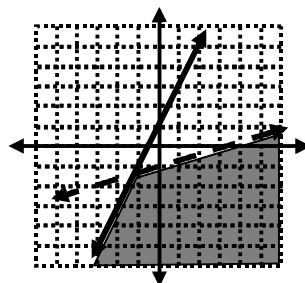

B)

C)

D)

27) What is the next step in solving the equation $12 = 5 - 3(x + 2)$?

    A) $12 = 2(x + 2)$
    B) $12 = 5 - 3x + 2$
    C) $12 = 5 - 3x + 6$
    D) $12 = 5 - 3x - 6$

28) Which expression below is equivalent to $a^4 \; a^3$?

    A) $a^9 \; a^7$

    B) $a^2 \; a^5$

    C) $a^4 \; a^4$

    D) $a^5 \; a^5$

29) Simplify. $\dfrac{y^7}{y^{-5}}$

    A) y^2

    B) y^{12}

    C) $\dfrac{1}{y^2}$

    D) $\dfrac{1}{y^{12}}$

30) Simplify. $\left(\dfrac{2x^4}{y} \right)^3$

    A) $\dfrac{6x^7}{y}$

    B) $\dfrac{8x^{12}}{y^3}$

    C) $\dfrac{8x^{12}}{y}$

    D) $\dfrac{6x^{12}}{y^3}$

31) Simplify. $(x^5 \; y)^2$

    A) $x^{10} \; y^2$

    B) $x^{10} \; y$

    C) $x^7 \; y$

    D) $x^7 \; y^3$

32) Simplify. $\dfrac{4x^6}{12xy^3}$

A) $\dfrac{3x^5}{y^3}$

B) $\dfrac{x^5}{3y^3}$

C) $\dfrac{y^3}{3x^5}$

D) $\dfrac{3x^6}{y^4}$

33) Simplify. $(x^2y^2)(2x^2y^2)^3$

A) $8x^8y^7$

B) $8x^8y^8$

C) $6x^8y^7$

D) $6x^8y^8$