Name……..Period…….Feb. 16, 2024

Classwork

1.

**Which is the factored form of**
$3a^2 - 24ab + 48b^2$ **?**

A $(3a-16b)(a-3b)$

B $(3a-16b)(a-3b)$

C $3(a-4b)(a-4b)$

D $3(a-8b)(a-8b)$

2.

**What quantity should be added to both sides of this equation to complete the square?**

$$x^2 - 8x = 5$$

A 4

B – 4

C 16

D –16

3.

**What are the solutions for the quadratic equation** $x^2 + 6x = 16$**?**

A $-2, -8$

B $-2, 8$

C $2, -8$

D $2, 8$

4.

Leanne correctly solved the equation $x^2 + 4x = 6$ by completing the square.
Which equation is part of her solution?

A $(x+2)^2 = 8$

B $(x+2)^2 = 10$

C $(x+4)^2 = 10$

D $(x+4)^2 = 22$

5

Which is one of the solutions to the equation $2x^2 - x - 4 = 0$?

A $\frac{1}{4} - \sqrt{33}$

B $-\frac{1}{4} + \sqrt{33}$

C $\frac{1+\sqrt{33}}{4}$

D $\frac{-1-\sqrt{33}}{4}$

6

$(4x^2 - 2x + 8) - (x^2 + 3x - 2) =$

A $3x^2 + x + 6$

B $3x^2 + x + 10$

C $3x^2 - 5x + 6$

D $3x^2 - 5x + 10$

7.

**Which is a factor of $x^2 - 11x + 24$?**

A $x + 3$

B $x - 3$

C $x + 4$

D $x - 4$

8

**Which of the following shows $9t^2 + 12t + 4$ factored completely?**

A $(3t + 2)^2$

B $(3t + 4)(3t + 1)$

C $(9t + 4)(t + 1)$

D $9t^2 + 12t + 4$

9

**If $x^2$ is added to $x$, the sum is 42. Which of the following could be the value of $x$?**

A –7

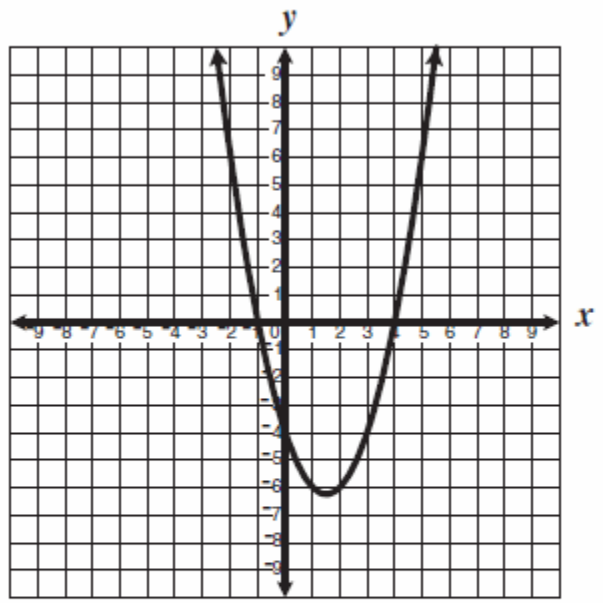
B –6

C 14

D 42

10.

The graph of the equation $y = x^2 - 3x - 4$ is shown below.




For what value or values of $x$ is $y = 0$?

A $x = -1$ only

B $x = -4$ only

C $x = -1$ and $x = 4$

D $x = 1$ and $x = -4$

11.

Which of the following expressions is equal to $(x+2)+(x-2)(2x+1)$?

A $2x^2 - 2x$

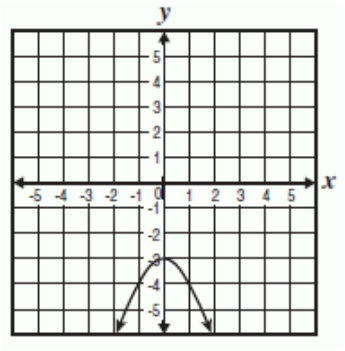
B $2x^2 - 4x$

C $2x^2 + x$

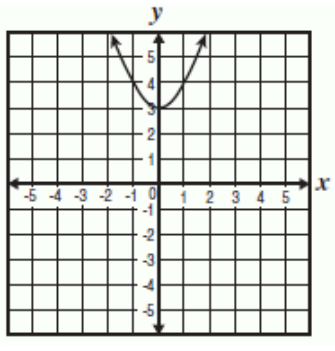
D $4x^2 + 2x$

12.

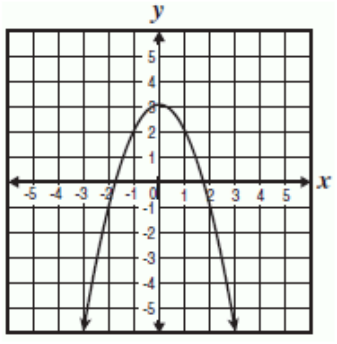
Which *best* represents the graph of $y = -x^2 + 3$?



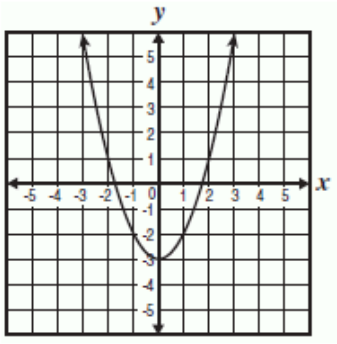

A




C




B




D

13.

$$\frac{5x^3}{10x^7} =$$

A $2x^4$

B $\frac{1}{2x^4}$

C $\frac{1}{5x^4}$

D $\frac{x^4}{5}$

14.

**The sum of two binomials is $5x^2 - 6x$. If one of the binomials is $3x^2 - 2x$, what is the other binomial?**

A $2x^2 - 4x$

B $2x^2 - 8x$

C $8x^2 + 4x$

D $8x^2 - 8x$

15.

**Which product of factors is equivalent to $(x+1)^2 - y^2$?**

A $(x+1+y)^2$

B $(x+1-y)^2$

C $(x-1+y)(x-1-y)$

D $(x+1+y)(x+1-y)$

16.

**For a wedding, Shereda bought several dozen roses and several dozen carnations. The roses cost $15 per dozen, and the carnations cost $8 per dozen. Shereda bought a total of 17 dozen flowers and paid a total of $192. How many roses did she buy?**

A 6 dozen

B 7 dozen

C 8 dozen

D 9 dozen

17.

**The total area of a rectangle is $4x^4 - 9y^2$. Which factors could represent the length times width?**

A $(2x^2 - 3y)(2x^2 + 3y)$

B $(2x^2 + 3y)(2x^2 + 3y)$

C $(2x - 3y)(2x - 3y)$

D $(2x + 3y)(2x - 3y)$

18.

**Which expression is equivalent to $(6y^2 - 2)(6y + 2)$?**

A $36y^2 - 4$

B $36y^3 - 4$

C $36y^2 + 12y^2 + 12y - 4$

D $36y^3 + 12y^2 - 12y - 4$

19

**Which polynomial represents $(3x^2 + x - 4)(2x - 5)$?**

A $6x^3 - 13x^2 - 13x - 20$

B $6x^3 - 13x^2 - 13x + 20$

C $6x^3 + 13x^2 + 3x - 20$

D $6x^3 + 13x^2 + 3x + 20$

20.

**What are the *x*-intercepts of the graph of $y = 12x^2 - 5x - 2$?**

A $1$ and $-\frac{1}{6}$

B $-1$ and $\frac{1}{6}$

C $\frac{2}{3}$ and $-\frac{1}{4}$

D $-\frac{2}{3}$ and $\frac{1}{4}$

21.

**Which ordered pair is the vertex of $f(x) = x^2 + 6x + 5$?**

A $(-3, -4)$

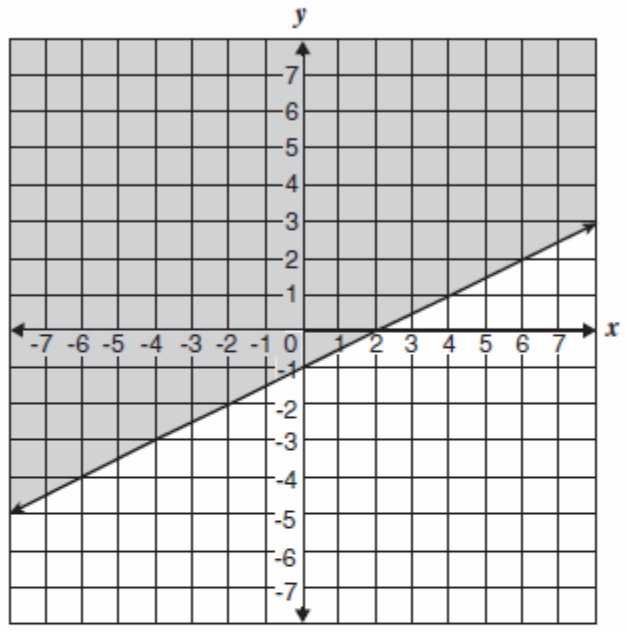
B $(-2, -3)$

C $(-1, 0)$

D $(0, -5)$

22

**Which inequality is shown on the graph below?**




A $y < \frac{1}{2}x - 1$

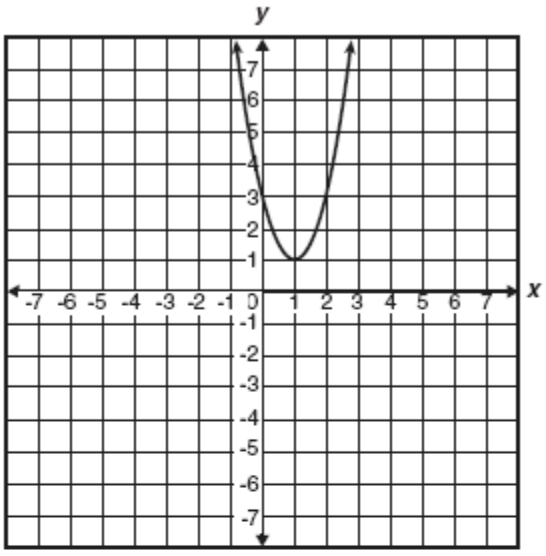
B $y \leq \frac{1}{2}x - 1$

C $y > \frac{1}{2}x - 1$

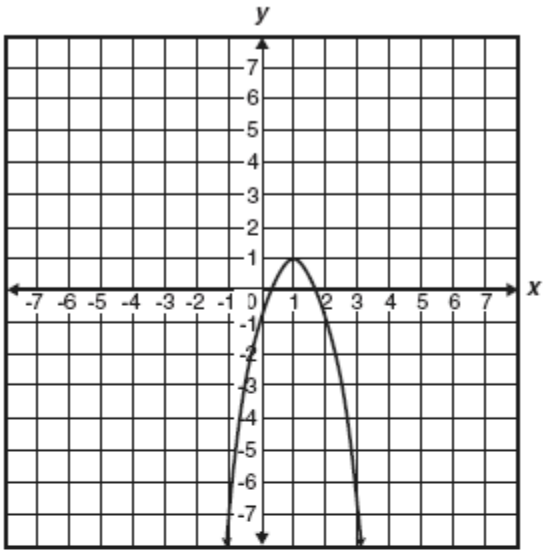
D $y \geq \frac{1}{2}x - 1$

23

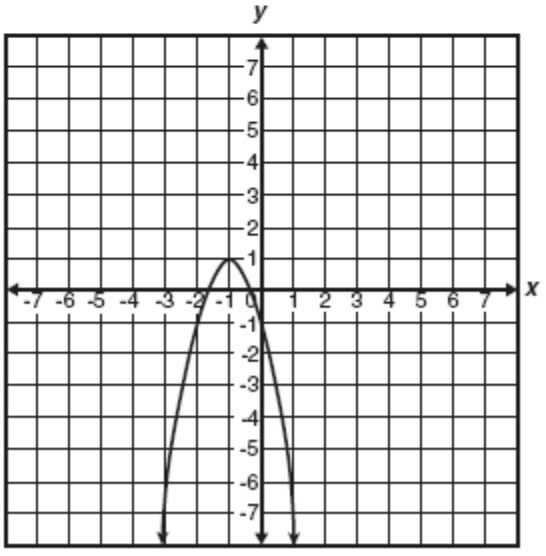
Which is the graph of $y = -2(x-1)^2 + 1$?



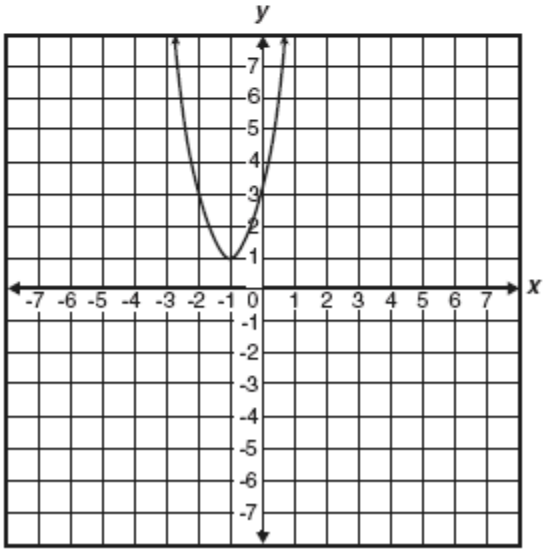

A




C




B




D

24

**Which point lies on the line defined by $3x + 6y = 2$?**

A (0, 2)

B (0, 6)

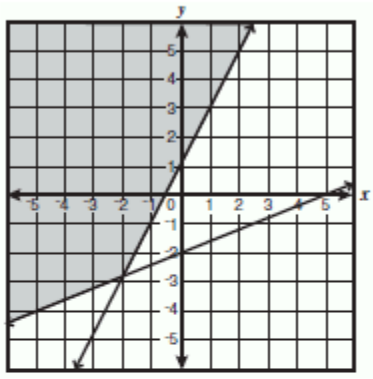
C $\left(1, -\frac{1}{6}\right)$

D $\left(1, -\frac{1}{3}\right)$

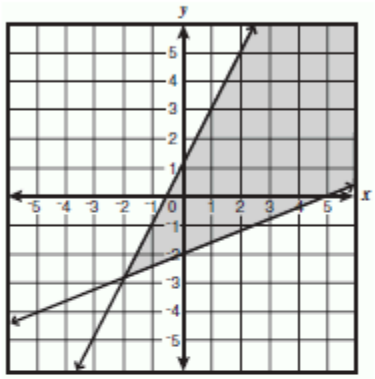
25

**Which graph *best* represents the solution to this system of inequalities?**

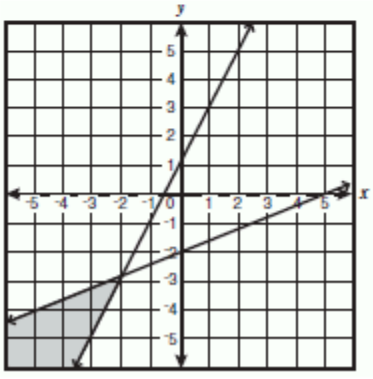
$$\begin{cases} 2x \geq y - 1 \\ 2x - 5y \leq 10 \end{cases}$$



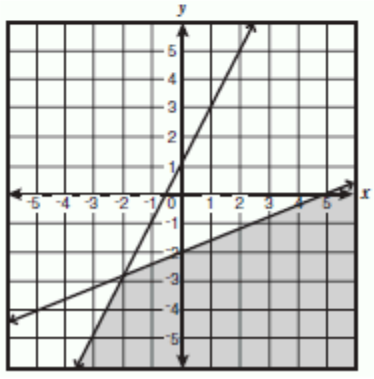
A



C



B



D

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$$\sqrt{16}+\sqrt[3]{8}=$$

A 4

B 6

C 9

D 10

27

**John's solution to an equation is shown below.**

| | |
|---|---|
| **Given:** | $x^2+5x+6=0$ |
| **Step 1:** | $(x+2)(x+3)=0$ |
| **Step 2:** | $x+2=0$ **or** $x+3=0$ |
| **Step 3:** | $x=-2$ **or** $x=-3$ |

**Which property of real numbers did John use for Step 2?**

A multiplication property of equality

B zero product property of multiplication

C commutative property of multiplication

D distributive property of multiplication over addition