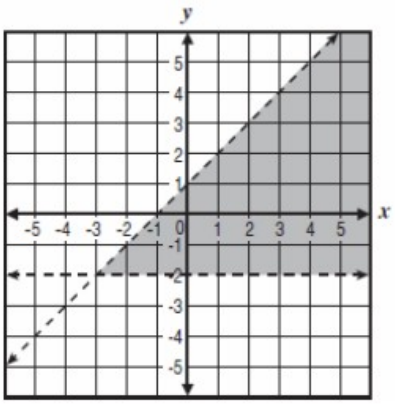
Algebra 2 Quick Quiz 12212022

Question 1.

What system of inequalities *best* represents the graph shown below?



A. ? $y > -2$ and $y > x + 1$

B. ? $y < -2$ and $y > x + 1$

C. ? $y > -2$ and $y < x + 1$

D. ? $y < -2$ and $y < x + 1$

Question 2

Which point lies in the solution set for the system $\begin{cases} 2y - x \geq -6 \\ 2y - 3x < -6 \end{cases}$ **?**

A. ? $(0, -3)$

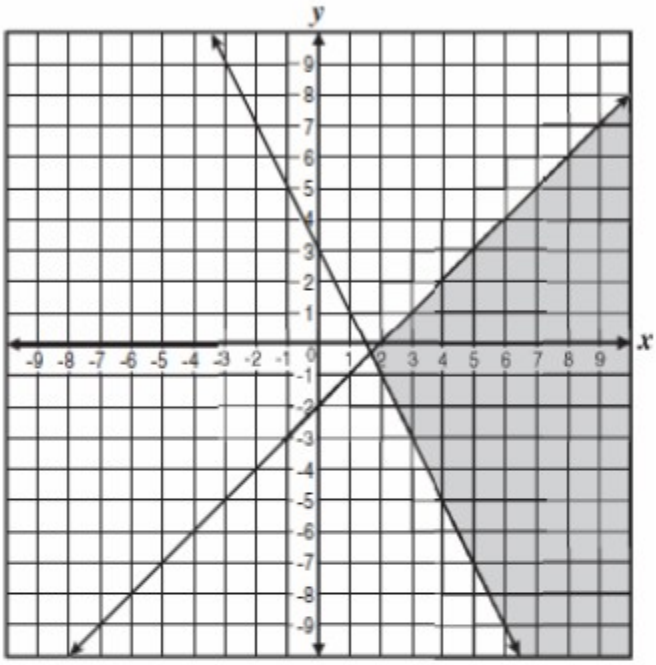
B. ? $(3, 1)$

C. ? $(-4, -1)$

D. ? $(4, 3)$

Question 3.

Which system of linear inequalities is represented by this graph?



A. ? $\begin{cases} y \geq 2x+3 \\ y \leq x-2 \end{cases}$

B. ? $\begin{cases} y \geq \frac{1}{2}x+3 \\ y \geq x-2 \end{cases}$

C. ? $\begin{cases} 2x+y \geq 3 \\ x-y \geq 2 \end{cases}$

D. ? $\begin{cases} 2x-y \geq 3 \\ x+y \leq 2 \end{cases}$

Question 4.

What is the solution to the following system of equations?

$$\begin{cases} 2x-3y=4 \\ 4x+y=-6 \end{cases}$$

A. ? $(-2,-1)$

B. ? $(5,-2)$

C. ? $(-2,5)$

D. ? $(-1,-2)$

Question 5.

$$2x+7\overline{)2x^4+21x^3+35x^2-37x+46}$$

A. ? $x^3+7x^2-7x+6+\frac{4}{2x+7}$

B. ? $2x^3+14x^2-14x+12-\frac{4}{2x+7}$

C. ? $x^3-7x^2+7x-6+\frac{4}{2x+7}$

D. ? $x^3+7x^2-7x+6-\frac{4}{2x+7}$

Question 6.

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

A. ? $6x^3 + 13x^2 + 3x - 20$

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

C. ? $6x^3 - 13x^2 - 13x - 20$

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

Question 7.

$(-2x^2 + 6x + 1) - 2(4x^2 - 3x + 1) =$

A. ? $-10x^2 + 12x - 1$

B. ? $-10x^2 - 1$

C. ? $6x^2 + 12x - 1$

D. ? $6x^2 - 1$

Question 8.

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

A. ? $36y^2 - 4$

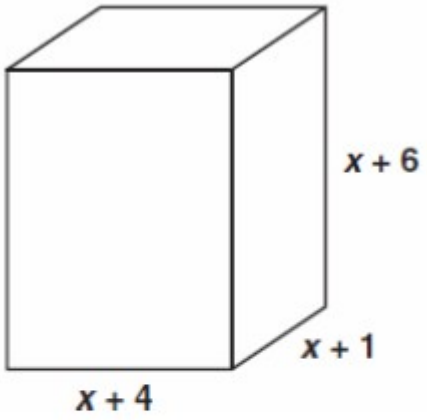
B. ? $36y^3 - 4$

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

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

Question 9.

What is the volume of the figure below?



A. ? $x^3 + 11x^2 + 34x + 24$

B. ? $x^3 + 10x^2 + 24x + 24$

C. ? $x^3 + 10x^2 + 34x + 24$

D. ? $x^3 + 11x^2 + 24x + 24$

Question 10.

What is $(5x^3 - 2x)(3x^2 + x - 8)$?

A. ? $15x^5 - x^4 - 42x^3 + 16x$

B. ? $15x^5 + 5x^4 - 46x^3 - 2x^2 + 16x$

C. ? $15x^6 - 35x^3 - 6x^2 + 14x$

D. ? $5x^3 + 3x^2 - x - 8$

Bonus Question

Question 11

A scientist places 7.35 grams of a radioactive element in a dish. The half-life of the element is 2 days. After d days, the number of grams of the element remaining in the dish is given by the function $R(d) = 7.35\left(\frac{1}{2}\right)^{\frac{d}{2}}$. Which statement is true about the equation when it is rewritten without a fractional exponent?

Select **all** that apply.

A. An approximately equivalent equation is $R(d) = 7.35(0.250)^d$.

B. An approximately equivalent equation is $R(d) = 7.35(0.707)^d$.

C. The base of the exponent in this form of the equation can be interpreted to mean that the element decays by 0.250 grams per day.

D. The base of the exponent in this form of the equation can be interpreted to mean that the element decays by 0.707 grams per day.

E. The base of the exponent in this form of the equation can be interpreted to mean that about 25% of the element remains from one day to the next day.

F. The base of the exponent in this form of the equation can be interpreted to mean that about 70.7% of the element remains from one day to the next day.