

Honors Geometry Summer Assignment 2022

Answers

Directions: Practice these problems to help you review your Algebra I skills. Plan to ask questions the first few days of school. PLEASE show all of your work in a neat and logical format.

Part I: Solve each equation.

1) $3x + 2 = 23$

$$x = 7$$

2) $\frac{x}{2} - 6 = 9$

$$x = 30$$

3) $6n + 2 = 3n + 26$

$$n = 8$$

4) $3(x - 4) = 15$

$$x = 9$$

5) $\frac{1}{4}x + \frac{1}{2} = \frac{3}{4}x + \frac{1}{3}$

$$x = \frac{1}{3}$$

Part II: Write the equation of a line in slope-intercept form using the given information.

6) $m = 4; b = -8$

$$y = 4x - 8$$

7) $A(-2, 9)$ and $G(7, 0)$

$$y = -x + 7$$

8) A horizontal line that passes through the point $(6, 2)$.

$$y = 2$$

9) A vertical line that passes through the point $(-2, 7)$.

$$x = -2$$

Part III: Solve each system of equations algebraically, using substitution or elimination.

$$10) \begin{cases} 2x + y = -4 \\ 5x + 3y = -6 \end{cases}$$

$$(-6, 8)$$

$$11) \begin{cases} 6x + 2y = 10 \\ 3x + y = 5 \end{cases}$$

$$(-5, -3)$$

$$12) \begin{cases} x + 2y = 11 \\ x + 2y = 14 \end{cases}$$

No solution

Part IV: Simplify each polynomial.

$$13) (4x^2 - 11x + 10) + (5x - 31)$$

$$4x^2 - 6x - 21$$

$$14) (-3x^3 + x - 11) - (4x^3 + x^2 - x)$$

$$-7x^3 - x^2 + 2x - 11$$

$$15) 5x(3^2 - x + 3)$$

$$15x^3 - 5x^2 + 15x$$

$$16) (x + 3y)(2x - y)$$

$$2x^2 + 5xy - 3y^2$$

Part V: Factor completely.

$$17) 3x^4 - 12x^3$$

$$3x^3(x - 4)$$

$$18) 6x^4 - 18x^3 + 15x^2$$

$$3x^2(2x^2 - 6x + 5)$$

$$19) x^3 - 2x^2 - 4x + 8$$

$$(x + 2)(x + 2)(x - 2)$$

$$20) x^3 + 3x^2 + 10x + 30$$

$$(x + 3)(x^2 + 10)$$

$$21) 3x^2 - 5x + 2$$

$$(3x - 2)(x - 1)$$

$$22) x^2 - 9x + 18$$

$$(x - 6)(x - 3)$$

$$23) 4x^2 - 11x + 6$$

$$(4x - 3)(x - 2)$$

$$24) 25x^2 - 16$$

$$(5x + 4)(5x - 4)$$

Part VI: Simplify. Leave answers in simplest radical form, i.e., $\sqrt{\quad}$. Do not use decimal approximations.

$$25) \sqrt{100} \quad 10$$

$$26) -\sqrt{1} \quad -1$$

$$27) \sqrt{98} \quad 7\sqrt{2}$$

$$28) \sqrt{75} \quad 5\sqrt{3}$$

$$29) \sqrt{\frac{36}{81}} \quad \frac{2}{3}$$

$$30) \frac{\sqrt{18}}{\sqrt{2}} \quad 3$$

$$31) \sqrt{\frac{7}{3}} \quad \frac{\sqrt{21}}{3}$$

$$32) \sqrt{\frac{8}{5}} \quad \frac{2\sqrt{10}}{5}$$