

Course Name: **Geometry**

Summer Assignment:

This packet includes material your teacher expects you to know when you begin the course. It is designed to be done over the course of the summer to provide practice and highlight the concepts you learned in your previous math course.

Instructions:

- Complete the packet on loose leaf paper.
- Write your name and the course on the top of every sheet you use.
- Number your work, and do the problems in order.
- Copy each problem before showing your work.
- Check your answers as you go (answers are included at the end of the packet).

**The completed assignment is due on the first day of class and is worth 25 points for all math courses. College Prep courses will take a 50 point Quiz on the 3<sup>rd</sup> day of class.**



Name: \_\_\_\_\_

**Factor the polynomial.**

1.  $2x^3 + 4x^2 + 8x$

2.  $40w^{11} + 16w^6$

3. Find the GCF of the terms of the polynomial.

$$8x^6 + 32x^3$$

**Simplify the product using FOIL.**

4.  $(3x - 7)(3x - 5)$

5.  $(4x + 3)(2x + 5)$

6.  $(6h - 5)(6h + 5)$

**Find the square.**

7.  $(2x - 6)^2$

8.  $(8m + 7)^2$

**Factor the expression.**

9.  $w^2 + 18w + 77$

10.  $d^2 + 10d + 9$

11.  $5x^2 - 80$

12. Simplify  $\sqrt{\frac{144}{49}}$ .

13. Simplify  $-\sqrt{2500}$ .

**Solve the equation using square roots.**

14.  $x^2 - 20 = -4$

**Solve the equation using the zero-product property.**

15.  $(2x + 2)(5x - 5) = 0$

16.  $-8n(10n - 1) = 0$

**Solve the equation by factoring.**

17.  $z^2 - 6z - 27 = 0$

18.  $3z^2 + 3z - 6 = 0$

19.  $15 = 8x^2 - 14x$

**Find the number of real number solutions for the equation.**

20.  $x^2 - 18 = 0$

**Simplify the radical expression. All variables represent positive numbers.**

21.  $-4\sqrt{160}$

22.  $\sqrt{144}$

23.  $-3\sqrt{180k^4}$

24.  $-2\sqrt{2p} - 2\sqrt{22}$

25.  $\sqrt{\frac{10}{81}}$

26.  $\sqrt{\frac{80w^3}{9}}$

**Simplify the radical expression by rationalizing the denominator.**

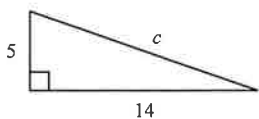
27.  $\frac{4}{\sqrt{21}}$

28.  $\frac{7\sqrt{100}}{\sqrt{500}}$

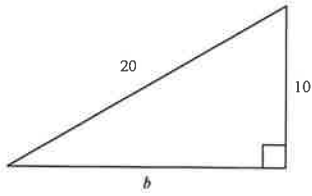
29. A square garden plot has an area of  $24 \text{ ft}^2$ .
- Find the length of each side in simplest radical form.
  - Calculate the length of each side to the nearest tenth of a foot.

**Find the length of the missing side. If necessary, round to the nearest tenth. (Hint: Use Pythagorean Theorem)**

30.



31.



**Determine whether the given lengths can be sides of a right triangle.**

32. 18 m, 24 m, 30 m

33. 7 cm, 40 cm, 41 c

**Which method(s) would you choose to solve the equation? Justify your reasoning.**

34.  $3x^2 - 27 = 0$

**Find the slope of the line given the following points.**

35. A(-3, -2), B(-1, 2)

36. C(-4, 0), D(0, -1)

37. **Find the equation of the line passing through the points J(-5, -4), K(0, -2).**

38. **Write the equation of a line that passes through the given point and is parallel to the graph of the given equation.**

$$(-5, -4), y = \frac{1}{2}x + 1$$

39. Write the equation of a line that passes through the given point and is perpendicular to the graph of the given equation.

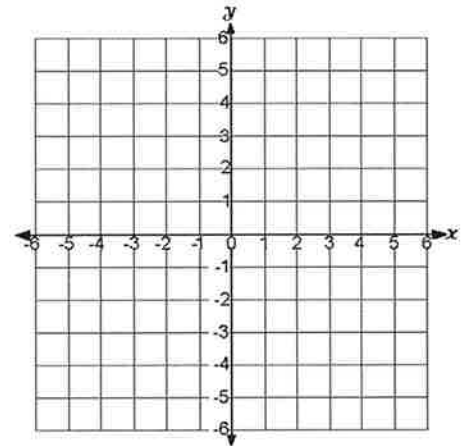
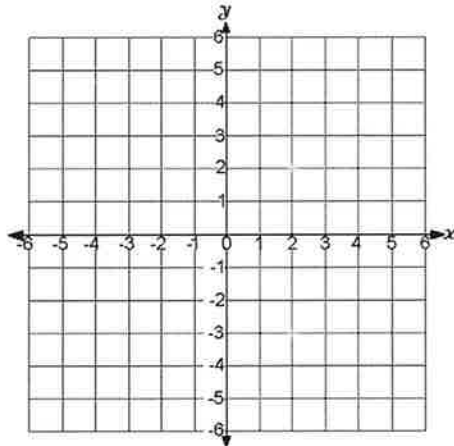
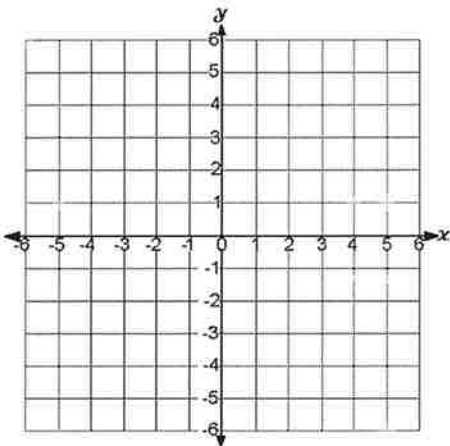
$$(-3, 1), y = -3x + 7$$

Identify the x-intercept and the y-intercept and graph.

40.  $y = 2x - 2$

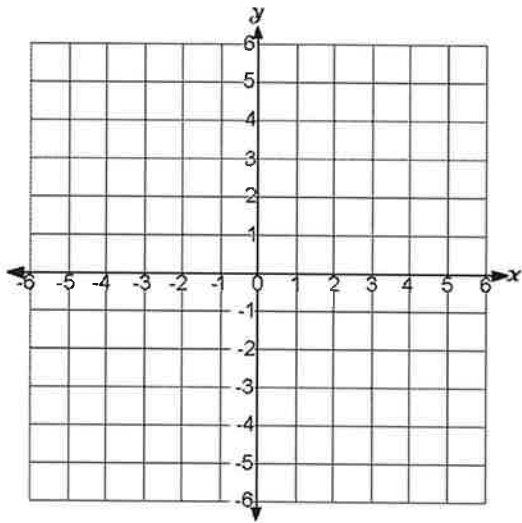
41.  $\frac{1}{2}x + y = 3$

42.  $\frac{-1}{2}y = x + 1$

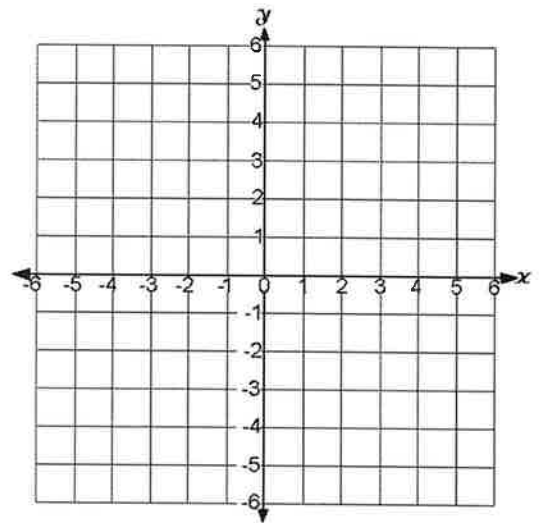


Graph the equation of the lines using slope and y-intercept.

43.  $y = 3x - 2$



44.  $Y = \frac{-1}{2}x + 4$



45.  $Y = \frac{2}{3}x$

