Geometry Summer Packet
For students taking Geometry 2025-2026

- This packet will count as your first homework assignment and is due the first day of class.
- There will be a test on this material in the first two weeks of school.
- Answers are provided on the last page of the packet.
- You must do your work on separate pages and show all work to receive full credit.
- The purpose of this packet is to keep math topics fresh in your mind over the summer and also to assess your knowledge of topics essential to our work in Geometry.

Geometry Summer Packet Name_____

Please do all work on a separate page.

Evaluate each expression without using a calculator.
(If you are having trouble, try looking up Operations With Fractions)

1) $\left(-1\frac{1}{6}\right)+\left(-\frac{5}{4}\right)$

2) $\left(-\frac{1}{3}\right)+\frac{1}{2}$

3) $8+\frac{3}{4}$

4) $\left(-3\frac{2}{7}\right)-\left(-2\frac{3}{5}\right)$

5) $\left(-\frac{7}{8}\right)-\frac{1}{3}$

6) $-2\cdot-\frac{3}{2}$

7) $-1\frac{5}{9}\cdot-\frac{2}{3}$

8) $-2\frac{1}{2}\cdot\frac{3}{2}$

9) $-10\cdot-\frac{14}{9}$

10) $-2\frac{1}{4}\cdot\frac{13}{8}$

11) $\frac{-2}{3}\div\frac{-1}{7}$

12) $1\div1\frac{7}{10}$

13) $-1\div\frac{-17}{9}$

14) $\frac{8}{7}\div-2\frac{3}{4}$

Simplify without a calculator.
(If you are having trouble, try looking up Simplifying Radicals)

15) $\sqrt{147}$

16) $3\sqrt{343}$

17) $\sqrt{72}$

18) $2\sqrt{50}$

Solve each equation.
(If you are having trouble, try looking up Solving Linear Equations)

19) $-116=-4(6x+1)+8x$

20) $4(5-5p)=120$

21) $-102 = 8 - 5(3x + 7)$

22) $-4(x + 4) = 8(x + 8) - 2x$

23) $-7 + 2(1 - m) = 7(7m - 8)$

24) $7x + 3x = 4(2x + 6) + 2(-3x + 4)$

Solve each equation for the indicated variable.
(If you are having trouble with these, try looking up Solving Literal Equations)

25) $\frac{c}{a} = d + r$, for a

26) $g = \frac{xc}{y}$, for x

27) $z = mx + yx$, for x

28) $zm = \frac{x + y}{x}$, for x

Solve each equation by factoring.
(If you are having trouble, try looking up Solving Quadratic Equations by Factoring)

29) $p^2 - 6p - 16 = 0$

30) $n^2 + 8n + 12 = 0$

31) $v^2 = -15 - 8v$

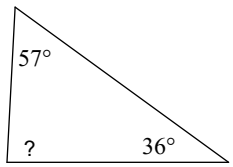
32) $-10 = -3n - n^2$

33) $0 = 15x - 14 - 4x^2$

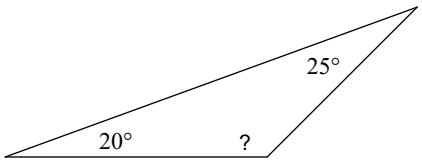
34) $7x^2 + 22x = 24$

Find the measure of each angle indicated.
(If you are having trouble with these, try looking up the Angle Sum of a Triangle)

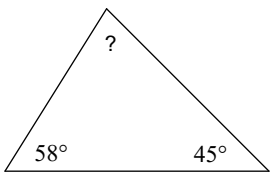
35)



36)

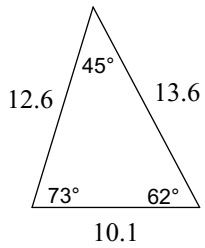


37)

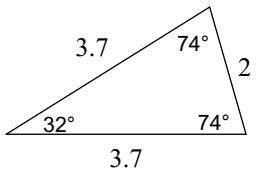


Classify each triangle by its angles and sides.
(If you are having trouble with these, try looking up Classifying Triangles)

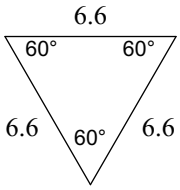
38)



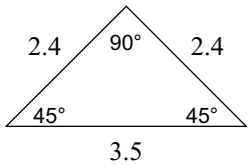
39)



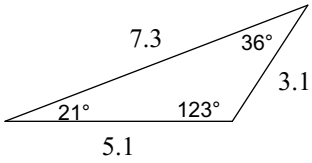
40)



41)



42)



Solve each system by elimination.
(If you are having trouble with these, try looking up Solving Systems of equations with elimination)

43) $3x - 9y = 21$
$9x - 3y = 15$

44) $-18x + 5y = -10$
$9x + 2y = -4$

45) $-6x + 5y = 23$
$2x - 3y = -17$

Solve each system by substitution.
(If you are having trouble with these, try looking up Solving Systems of equations with substitution)

46) $x - 2y = -6$
$-2x + 4y = -5$

47) $-2x + 5y = 4$
$-x + y = 5$

48) $-7x - 3y = 4$
$8x + y = -7$

Use the given coordinate plane to answer the questions:

49) A) What are the coordinates of the point(s) on the x-axis?_____

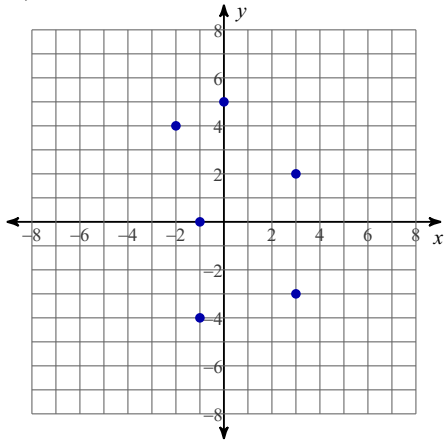
B) What are the coordinates of the point(s) on the y-axis?_____

C)What are the coordinates of the point(s) in Quadrant I?_____

D)What are the coordinates of the point(s) in Quadrant II?_____

E)What are the coordinates of the point(s) in Quadrant III?_____

F) What are the coordinates of the point(s) in Quadrant IV?_____



Simplify each and state the excluded values.
(If you are having trouble with these, try looking up Simplifying Rational Expressions)

50) $\frac{24x^5}{24x^3}$

51) $\frac{12v^3}{24v^2}$

52) $\frac{18x}{18x^2}$

53) $\frac{15x^2 + 12x}{12x^3}$

Solve each equation with the quadratic formula.
(If you are having trouble with these, try looking up the Quadratic Formula)

54) $5n^2 + 8n - 48 = 0$

55) $a^2 - 7 = 0$

56) $4x^2 - 5x - 6 = 0$

57) $n^2 - 25 = 0$

Evaluate each function.
(If you are having trouble with these, try looking up Evaluating Functions)

58) $h(x) = x + 3$; Find $h(10)$

59) $f(n) = 3n - 3$; Find $f(-8)$

60) $f(x) = 2x + 2$; Find $f(1)$

61) $p(x) = 3x + 5$; Find $p(-7)$

62) $g(x) = 3x^2 - 4x$; Find $g(-4x)$

63) $f(n) = -2n^2 - 2n$; Find $f\left(\frac{n}{2}\right)$

64) $f(n) = n^2 + 2$; Find $f(n + 2)$

65) $f(t) = 3t^2 + 3t$; Find $f(-4 - t)$

Solve each proportion.
(If you are having trouble with these, try looking up Solving Proportions)

66) $\frac{5}{3} = \frac{6}{x}$

67) $\frac{9}{6} = \frac{2}{m}$

68) $\frac{3}{7} = \frac{9}{p}$

69) $\frac{8}{10} = \frac{x - 10}{6}$

70) $\frac{3}{k + 9} = \frac{4}{9}$

71) $\frac{5}{n + 6} = \frac{8}{3}$

72) $\frac{n + 8}{10} = \frac{n}{2}$

73) $\frac{v}{9} = \frac{v + 4}{4}$

74) $\frac{k - 4}{3} = \frac{k}{10}$

75) $\frac{x + 3}{6} = \frac{x + 8}{5}$

76) $\frac{x + 9}{5} = \frac{x + 6}{3}$

77) $\frac{8}{n - 9} = \frac{3}{n - 2}$

Find the midpoint of the line segment with the given endpoints.
(If you are having trouble with these, try looking up the Midpoint Formula)

78) $(7, -4)$, $(0, 5)$

79) $(-9, 1)$, $(-3, 10)$

80) $\left(-2, \frac{1}{8}\right)$, $\left(4\frac{1}{6}, 5\frac{5}{6}\right)$

81) $\left(3\frac{9}{10}, -3\frac{1}{10}\right)$, $\left(2\frac{9}{10}, 1\right)$

Answers to Please do all work on a separate page.

1) $-\frac{29}{12}$
2) $\frac{1}{6}$
3) $\frac{35}{4}$
4) $-\frac{24}{35}$
5) $-\frac{29}{24}$
6) 3
7) $\frac{28}{27}$
8) $-\frac{15}{4}$
9) $\frac{140}{9}$
10) $-\frac{117}{32}$
11) $\frac{14}{3}$
12) $\frac{10}{17}$
13) $\frac{9}{17}$
14) $-\frac{32}{77}$
15) $7\sqrt{3}$
16) $21\sqrt{7}$
17) $6\sqrt{2}$
18) $10\sqrt{2}$
19) $\{7\}$
20) $\{-5\}$
21) $\{5\}$
22) $\{-8\}$
23) $\{1\}$
24) $\{4\}$
25) $a = \frac{c}{d + r}$
26) $x = \frac{gy}{c}$
27) $x = \frac{z}{m + y}$
28) $x = \frac{y}{zm - 1}$
29) $\{-2, 8\}$
30) $\{-6, -2\}$
31) $\{-5, -3\}$
32) $\{-5, 2\}$
33) $\left\{\frac{7}{4}, 2\right\}$
34) $\left\{\frac{6}{7}, -4\right\}$
35) 87°
36) 135°
37) 77°
38) acute scalene
39) acute isosceles
40) equilateral
41) right isosceles
42) obtuse scalene
43) $(1, -2)$
44) $(0, -2)$
45) $(2, 7)$
46) No solution
47) $(-7, -2)$
48) $(-1, 1)$
49) A) (-1,0)
B) (5,0)
C) (3,2)
D) (-2,4)
E) (-1,-4)
F) (3, -3)
50) x^2 ; $\{0\}$
51) $\frac{v}{2}$; $\{0\}$
52) $\frac{1}{x}$; $\{0\}$
53) $\frac{5x + 4}{4x^2}$; $\{0\}$
54) $\left\{\frac{12}{5}, -4\right\}$
55) $\{\sqrt{7}, -\sqrt{7}\}$
56) $\left\{2, -\frac{3}{4}\right\}$
57) $\{5, -5\}$
58) 13
59) −27
60) 4
61) −16
62) $48x^2 + 16x$
63) $-n - \frac{1}{2}n^2$
64) $n^2 + 4n + 6$
65) $36 + 21t + 3t^2$
66) $\{3.6\}$
67) $\{1.33\}$
68) $\{21\}$
69) $\{14.8\}$
70) $\{-2.25\}$
71) $\{-4.13\}$
72) $\{2\}$
73) $\{-7.2\}$
74) $\{5.71\}$
75) $\{-33\}$
76) $\{-1.5\}$
77) $\{-2.2\}$
78) $\left(3\frac{1}{2}, \frac{1}{2}\right)$
79) $\left(-6, 5\frac{1}{2}\right)$
80) $\left(1\frac{1}{12}, 2\frac{47}{48}\right)$
81) $\left(3\frac{2}{5}, -1\frac{1}{20}\right)$