

Math Summer Enrichment Packet for Geometry CP and Honors

Purpose: The purpose of our summer math enrichment program is to ensure that the skills, knowledge, and content mastered over the course of the year are retained over the summer. This will help students to be better prepared and ready to succeed in their next math course.

Grading: Completion of all the assigned pages/problems will be counted as your first test/project grade of the year. You will be graded upon completion of all the work.

What portions of the math packet do I need to complete?

On the chart below (a copy of this packet is also available on the SJP website), teachers have identified specific portions of the math packet for you to complete. You only need to complete the problems assigned for your course level – i.e. CP or Honors

Where do I complete the assignments?

All problems should be completed on lined paper. Neatness is important in math, so take your time and use a pencil. Show all of your work and clearly number all of the problems. Circle your answers.

Due Dates: The assignment will be due to your teacher on the first day of class.

What if I struggle with the work?

Parents/guardians and students, please be aware that the math packet does not come with additional examples and/or instructions. Sections of this packet may be challenging for you at times. We suggest that if you run into difficulty with certain concepts and/or problems that you seek out advice from family and friends, previous math tutors, or utilize resources such as Khan Academy. The key is to give the assignment your best effort.

Have a great summer!

We look forward to working with all of you next year.

Best wishes,
Your Math Department

Math Summer Enrichment Packet for Geometry CP and Honors

Directions: On the chart below, you'll find a list of the problems you are expected to complete over the summer. You'll notice that your summer enrichment is divided into 8 separate assignments. Ideally, you should plan to spread your work out over the course of the summer, and complete 1 – 2 assignments per week. You'll also notice that students in CP and Honors level courses have differing requirements. Take careful note of which pages your math level is expected to complete.

Assignment	College Prep Problem Set	Honors Problem Set
Section 1 Measurement	1-14	1-14
Section 2 Equations	1-20, 23,26,28	1-30
Section 3 Equations of Linear Functions	1-10	1-12
Section 4 Graphing	1-12	1-12
Section 5 Solving Systems	1-9	1-12
Section 6 Radical Functions	1-18	1-25
Section 7 Quadratic Functions	1-15	1-30
Section 8 Geometry Review	1-9	1-15

Have a great summer,
Your Math Department

Section 1 Measurement

Complete each sentence.

1) 120 in. = ? ft

2) 18 ft = ? yd

3) 10 km = ? m

4) 210 mm = ? cm

5) 3100m = ? km

6) 5280 yd = ? mi

7) .62 km = ? m

8) 12L = ? mL

9) 4 gal = ? qt

10) 13 lb = ? oz

11) 32 fl oz = ? c

12) 90 in = ? yd

13) A box of cereal is 13 ounces. About how many grams is it?

14) A road sign in Canada gives the distance to Toronto as 140 kilometers. What is the distance to the nearest mile?

Section 2 Equations

Solve each equation.

1) $x - 7 = -19$

2) $b + 2 = -5$

3) $\frac{-y}{12} = 6$

4) $\frac{m}{4} = -20$

5) $-12w = 84$

6) $\frac{12}{5}f = -18$

7) $5c - 7 = 13$

8) $2w + 6 = 6w - 10$

9) $\frac{m}{10} + 15 = 21$

10) $8x + 1 = 3x - 19$

11) $9n + 4 = 5n + 18$

12) $-4 = 5d - 24$

13) $-2q + 17 = -13$

14) $\frac{2}{9}x - 4 = \frac{2}{3}$

15) $5(m - 1) = -25$

16) $-8a - 11 = 37$

17) $-3(d - 7) = 6$

18) $3.7q + 26.2 = 111.67$

19) $2n + \frac{1}{2} = \frac{5}{8}$

20) $-21 = 7y + 5 - 3y$

21) $4x - 12 = 4(x - 3)$

$$22) \frac{2h - 17}{3} = -11$$

$$23) |x - 6| = 11$$

$$24) |-4w + 2| = 14$$

$$25) 2|3x - 4| = 18$$

$$26) \frac{4}{9} = \frac{52}{h}$$

$$27) \frac{x+2}{7} = \frac{5}{3}$$

Write an equation and solve.

28) The sum of three consecutive integers is 336. What are the integers?

29) The sum of two consecutive even numbers is 554. What are the integers?

30) Max is four years younger than his sister Brenda. Max is 16 years old. How old is his sister.

Section 3 Equations of Linear Functions

Find the slope of the line that passes through the given points

1) (3,-7), (6,-1)

2) (-5, 3), (7, -6)

3) (4, -8), (6, -8)

Write an equation of the line described in slope intercept form.

Slope intercept form: $y = mx + b$

4) $m = -3$, y intercept = 7

5) $m = \frac{5}{8}$, y intercept = 4

6) $m = 5$, (4, -1)

7) $m = 2$, (-1, -1)

8) (7, -2), (6, -5)

9) (1, 2), (10, 2)

10) (-6, 0), vertical line

11) contains (4,2) and is parallel to $y = 5x - 1$

12) contains (-6,2) and is perpendicular to $y = -3x + 2$

Section 4 Graphing

1) Graph and label each point on a coordinate plane

- A. (4, -2) B. (-3, 0) C. (-6, -1) D. (-5, -7)

Graph the equation of the line.

- 2) $y = 3x - 1$ 3) $y = -2x + 4$ 4) $y = -5$
5) $2x + y = 7$ 6) $6x + 4y = 16$ 7) $x = 3$
8) $\frac{1}{3}x + y = 2$ 9) $8 - \frac{3}{4}x = y$ 10) $5x - 6y = 36$
11) $7x = -7 + 14y$ 12) $6x - 8 = 3y$

Section 5 Solving Systems

Solve by graphing.

- 1) $y = 2x + 3$ 2) $y = -3x + 10$ 3) $y = -6$
 $y = x - 5$ $y = x - 2$ $x = 4$

Solve by substitution.

- 4) $2x - y = 8$ 5) $x + 2y = 6$ 6) $y = 2x + 1$
 $y = 2x - 3$ $3x - 4y = 28$ $3x + y = -9$

Solve by elimination.

- 7) $5x - y = 7$ 8) $7x + 3y = -6$ 9) $5x + 6y = -8$
 $7x - y = 11$ $7x - 2y = -31$ $2x + 3y = -5$

Solve using any method

- 10) $x + 5y = 17$ 11) $8x + 3y = 4$ 12) $4x + 2y = 8$
 $-4x + 3y = 24$ $7x + 2y = -3$ $3x + 3y = 9$

Section 6 Radical Functions

Simplify. Leave in radical form. No decimals. * = *multiplication*

- | | | | |
|-------------------------------|--------------------------------------|-----------------------------------|-------------------------------------|
| 1) $\sqrt{80}$ | 2) $\sqrt{140}$ | 3) $\sqrt{75}$ | 4) $\sqrt{50} * \sqrt{10}$ |
| 5) $\sqrt{12} * \sqrt{20}$ | 6) $\sqrt{16} * \sqrt{25}$ | 7) $\sqrt{\frac{121}{16}}$ | 8) $\sqrt{\frac{81}{9}}$ |
| 9) $\sqrt{\frac{720}{5}}$ | 10) $3\sqrt{20}$ | 11) $-5\sqrt{25}$ | 12) $3\sqrt{10} * 4\sqrt{10}$ |
| 13) $\sqrt{98x^2}$ | 14) $\sqrt{56a^2b^4c^5}$ | 15) $\sqrt{\frac{288}{147}}$ | 16) $\sqrt{\frac{63}{8}}$ |
| 17) $\sqrt{\frac{10p^3}{27}}$ | 18) $\frac{\sqrt{108}}{\sqrt{2x^6}}$ | 19) $\frac{4}{5-2\sqrt{3}}$ | 20) $\frac{7\sqrt{3}}{5-2\sqrt{6}}$ |
| 21) $\frac{3}{\sqrt{48}}$ | 22) $\frac{\sqrt{24}}{\sqrt{125}}$ | 23) $\frac{3\sqrt{5}}{2\sqrt{6}}$ | 24) $\sqrt{2ab^2} * \sqrt{10a^5b}$ |
| 25) $\frac{3}{-2+\sqrt{13}}$ | | | |

Section 7 Quadratics

Find each product

- | | | |
|-----------------------|-----------------------|---------------------|
| 1) $(x - 6)(x + 4)$ | 2) $(3x - 1)(x+3)$ | 3) $(8 - y)(y + 1)$ |
| 4) $(2x + 3)(5x - 1)$ | 5) $(9x - y)(9x + y)$ | |

Factor.

- | | | |
|-------------------------|-----------------------|------------------------|
| 6) $x^2 + 2x - 15$ | 7) $x^2 - 7x + 18$ | 8) $x^2 + 9x + 10$ |
| 9) $x^2 - 24x - 25$ | 10) $10a^2 + 40a$ | 11) $x^2 - 25$ |
| 12) $x^2 - 7xy + 12y^2$ | 13) $5x^2 + 34x + 24$ | 14) $12x^2 + 69x + 45$ |
| 15) $3x^2 - 17x + 20$ | | |

Solve. Use any method. Round to the nearest tenth if necessary.

16) $x^2 - 9x + 14 = 0$

17) $x^2 - 100 = 0$

18) $33x^2 = -22x$

19) $x^2 - 12x = -20$

20) $3x^2 + 5x - 12 = 0$

21) $x^2 - 4x = 12$

22) $2x^2 + 11x = 6$

23) $2x^2 - 11x + 10 = 0$

24) $\sqrt{x} - 4 = 1$

25) $\sqrt{25x^2} = 125$

26) $\sqrt{9x - 2} = 4$

27) $\sqrt{\frac{1}{2}} = 36$

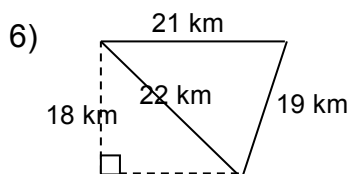
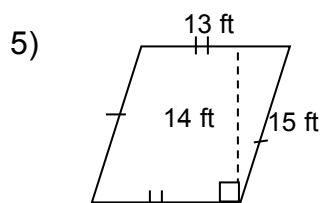
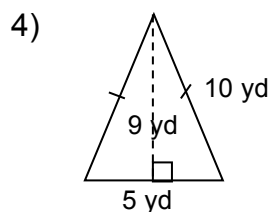
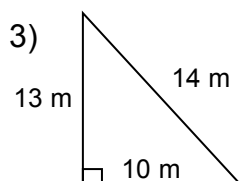
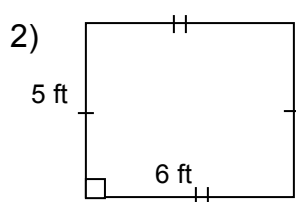
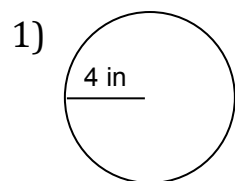
28) $\sqrt{x - 3} = 6$

29) $x^2 - 5x = 0$

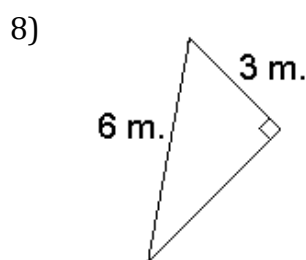
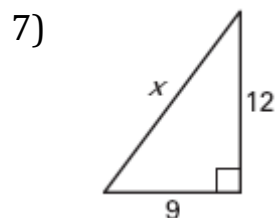
30) $x^2 - 5x - 6 = 0$

Section 8 Geometry Review

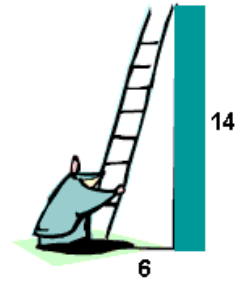
Find the area and perimeter (or circumference) of each figure. Round your answers to the nearest tenth if necessary.



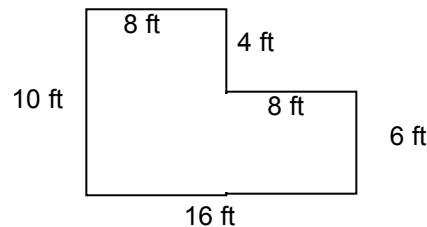
Find the missing side lengths of the right triangle. Round your answers to the nearest tenth if necessary.



9) What is the length of the ladder? It's 6 ft. from the house at the bottom and touches the wall 14 ft. up at the top. **Simplify your answer**



10) Find the area and perimeter of this compound figure



11) Suzanne is making a frame for an 8-inch by 10-inch photo. How much wood does she need for the frame?

12) The diameter of a quarter is 24 mm. What is the quarter's circumference?

13) The floor of our classroom is 50 feet by 75 feet. What is the area of our floor?

14) Each tire on your bicycle has a diameter of 26 inches. About how far will you travel when the tires make one complete revolution?

15) Lisa is covering a rectangular table with small square tiles. It will take 32 rows of tiles with 48 tiles in each row. How many tiles are needed to cover the table?