

Holy Family Catholic School
Summer Math Packet
Due the first week of school

Rising 8th Grade

Purpose: This assignment is designed to keep you thinking about math even when you're on vacation. Math is everywhere. It shows up where you're least expecting. Even though you may be used to thinking about math only in school, I want you to realize that you see math in most aspects of your life. Math can be really fun when you can start to see where you never did before.

Directions:

1. You may solve each problem in the space provided. If you need more space, you may do work on a separate sheet of paper; write the number and letter for which your solution goes. Your work must be done in pencil, not ink, and be neatly labeled and well organized so that it is easy to follow. You may use colored pencils if you want. You may also use graph paper as needed and attach it in the answer space.
2. Some questions require written explanations as part of the solution. You may also include additional written responses to support mathematical calculations or reasons for choosing a particular solution method. All explanations must use complete sentences. Be clear and concise in your responses in order to receive credit. Please write clearly!
3. Some questions have multiple parts (within the multiple parts). Be sure to answer each part.
4. You may use a calculator to check your work but you must show all work and computations leading to your final answers. Include general formulas that you use before making substitutions and calculations as part of your solutions.
5. The assignment will be due at the end of the first week of school (either Thursday or Friday). The due date will be announced on the first day of school.
6. The assignment counts as a homework grade. Part of the grade is given for completion (10 points) and part is given for accuracy (15 points).

Name: _____

Completion: _____

Accuracy: _____

Total Score: _____

1. Simplify the following. Show all work. Fractions must be written in simplest form.

a. $5(8-2)+3-8\div 2$

b. $8+12\div 2+3-15\div 5$

c. $6\frac{7}{8}\cdot 3\frac{2}{5}$

d. $5\frac{1}{4}-3\frac{2}{5}$

e. $15\frac{1}{6}\div 4\frac{3}{4}$

f. $7\frac{3}{4}+9\frac{2}{3}$

g. 19^*-2

b. $|-9+4|$

i. $-8+(-3)$

j. $-27\div 3$

k. $14-(-5)$

l. $-|-16+25|$

2. You have a box containing 6 red ribbons, 4 blue ribbons, 3 green ribbons, and 2 white ribbons. Find the probabilities.

a. P (white)

b. P (red or green)

c. P(green and white)

3. Solve for the unknown. Use the method taught in class and show all work.

a. $6 + x = 8$

b. $3w - 8 = 16$

c. $\frac{4}{x} = \frac{6}{21}$

d. $6 = \frac{a}{4} + 2$

e. $144 = -12(x + 5)$

f. $r + 11 + 8r = 29$

4. Solve the inequalities. Use the method taught in class and show all work. Then graph your answer.

a. $-12 > x - 7$

b. $2x + 4 \leq 24$

c. $-3(p + 1) < -18$

d. $-50 < 7k + 6 < -8$

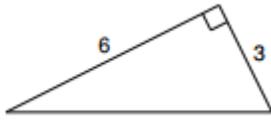
5. Find the slope of the lines passing through the two given points.

a. $(-4, 2), (0, -8)$

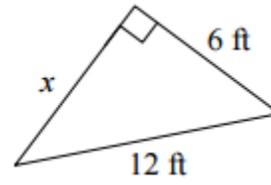
b. $(6, 7), (-18, 7)$

6. Solve for the unknown.

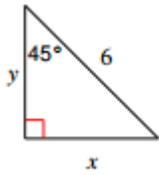
a.



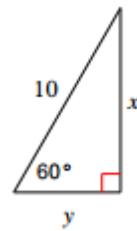
b.



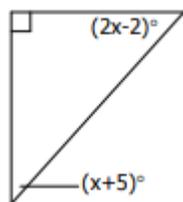
c.



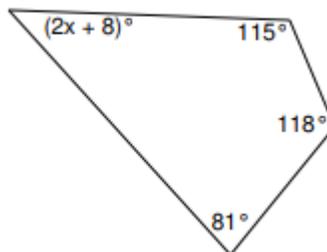
d.



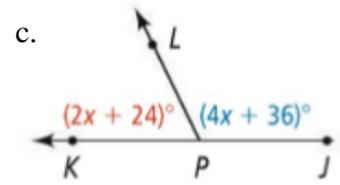
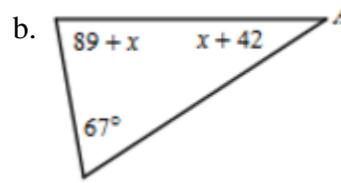
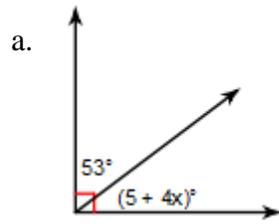
e.



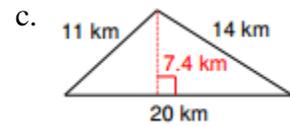
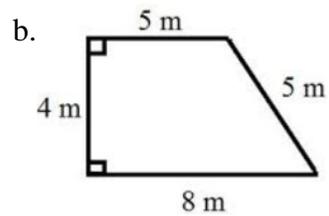
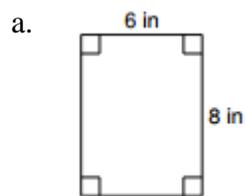
f.



7. Find the value of x . Show work for full credit.



8. Find the perimeter and area of the following shapes. Show all work. Use correct units in your answer.



9. Before going to the beach you want to get some new clothes. Since it's already summer, the malls are having fantastic sales on their summer stock. You make a list of the things you want to get while the prices are really good.



a. All bathing suits are marked down 30%. You also have a coupon that gives you an additional 10% off, and a \$10 gift card. If a bathing suit you want has an original ticket price of \$48, and the gift card is applied after the 10% discount, how much will you pay. Don't forget to include the 6% sales tax.

b. You go back later in the week. Sunglasses are now on sale for 10% off. You have \$15 to spend. What is the highest original ticket price that you can afford with the discount and 6% sales tax?

c. You decide to go back on another day to buy more bathing suits. Since it's the end of the sale, the manager decided to add a premium. If you buy two suits the second, lower priced item will have a 40% discount applied. You've chosen two different suits, one originally priced at \$44 and the other originally priced at \$37. How much will you pay, including the 6% sales tax?

10. You're thinking of setting up a lemonade stand in your neighborhood.

a. Write an equation to determine how many containers of powdered mix you need to make 10 gallons of lemonade if one container of powdered mix makes 4 gallons of lemonade. Then find how many containers of powdered mix you must have. Be careful with this one.

b. If you make all 10 gallons of lemonade, how many fluid ounces does that equal? Write your answer in scientific notation.

c. On the second day, you decide that you like mixing ice tea mix with the lemonade, and your mixture is $\frac{3}{5}$ lemonade and $\frac{2}{5}$ iced tea. If you still use the 8 fluid ounce cups, how many of the 8 ounces is lemonade? If you made a 48 fluid ounce container, how many of the 48 ounces is lemonade? What percent of the drink is iced tea?

d. You got 5 packages of cups. Two of the packages had 100 red cups. Two of the packages had 75 blue cups. One package had 125 yellow cups. On the first day you put them all in a large bag. When you serve the lemonade, you choose one cup at random.

What is the probability that the first cup chose a yellow cup?



What is the probability that the first two cups you choose are blue and red?

11. Your best friend is having a pool party. The pool is rectangular, 27 feet long by 15 feet wide, and has an average depth of 8 feet.

a. Your friend said they just had the pool repainted over the summer. Find the surface area of the pool that was painted.

b. Your friend watched as her father filled the pool. When it was one-third full, he said there was approximately 8000 gallons. How many gallons were used to completely fill the pool?

c. Your friend's father used a garden hose to fill the pool. If it takes an hour to fill the pool with 550 gallons of water, how many hours did it take to fill the pool? How many days is this? (Hint: use your answer from part b)

d. You find several ring-shaped rafts. The rafts are 4 feet wide. If you and your friends line up, how many rafts can you fit along the length of the pool?



12. You got a part time job working in the library. At the end of each day, one of your responsibilities is to sort how many of each types of books were checked out. Of course you know that all books are separated into fiction and non-fiction. In the fiction category, you are keeping track of drama, mystery, poetry and science fiction genres. In the non-fiction category, you are keeping track of biographies, self-help, and travel genres. All books can be checked out as hard copy, or electronic. The computer keeps track of which books are checked out, and lets you sort by genre.

Book Type	Number of Books
Biographies	14
Drama	28
Mystery	17
Poetry	2
Science Fiction	14
Self-Help	5
Travel	11

a. Draw a circle graph for the book types.



b. Calculate the mean, mode, and median of the set of numbers.

c. On the next day, six of the travel books are returned. How many combinations of these six books can there be?

d. If one person checked out three of the biography books, in how many ways can the three books be read in a particular order?