Math Summer Enrichment Packet for Algebra CP and Honors

Directions: On the chart below, you will find a list of the problems you are expected to complete over the summer. You will notice that your summer enrichment is divided into seven 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 will 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	Honors
Section 1	**#1-20**	**#1-22**
Section 2	**#1-29**	**#1-31**
Section 3	**#1-14, 17-19**	**#1-21**
Section 4	**#1-10**	**#1-20**
Section 5	**#1-7, 15-18**	**#1-23**
Section 6	**#1-8**	**#1-12**
Section 7	**#1-6, 12-16**	**#1-16**

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.

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.

Due Date: 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

Section 1

Find each sum or difference.

1. – 8 + 13
2. 11 + (-19)
3. – 19 – 8
4. – 77 + (-46)
5. 12 – 34
6. 41 + (-56)
7. 50 -82
8. -47 -13
9. -80 – 102

Find each product or quotient.

10. 5(18)
11. 60 ÷ 12
12. -12(15)
13. – 64 ÷ (-8)
14. 8(-22)
15. 54 ÷ (-6)
16. 30(14)
17. -23(5)
18. -200 ÷ 2

19. The outside temperature was – 4°F in the morning and 13°F in the afternoon. By how much did the temperature increase?

20. A dolphin swimming 24 feet below the ocean's surface dives 18 feet straight down. How many feet below the ocean's surface is the dolphin now?

21. A movie theatre gave out 50 coupons for $3 off each movie. What is the total amount of discounts provided by the theatre?

22. Dwight earns $11 per hour. He works 14 hours per week. His employer withholds $32 from each paycheck for taxes. If he is paid weekly, what is the amount of his paycheck?

Section 2

Order each set of rational numbers from least to greatest.

1. 3.8, 3.06, $3\frac{1}{6}$, $3\frac{3}{4}$
2. $2\frac{1}{4}$, $1\frac{7}{8}$, 1.75, 2.4
3. 0.11, $-\frac{1}{9}$, - 0.5, $\frac{1}{10}$
4. $-4\frac{3}{5}, -3\frac{2}{5}, -4.65, -4.09$

Find each sum or difference.

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

6. $\frac{1}{2} + \frac{1}{4}$

7. $\frac{3}{7} + \frac{5}{14}$

8. $\frac{7}{10} - \frac{2}{15}$

9. $\frac{-1}{12} - (\frac{-3}{4})$

10. $\frac{4}{5} + (-\frac{1}{3})$

11. -1.6 + (-3.8)

12. 79.3 – (-14)

13. 26.37 + (-61.1)

14. – 9.16 – 10.17

15. 43.2 + (-27.9)

16. -78.2 – 89.7

Find each product or quotient.

17. 6.5(0.13)

18. 42.3 ÷ (-6)

19. 108 ÷ (-0.9)

20. -14.1(-2.9)

21. -23.94÷ 10.5

22. -.75(-6.4)

23. $\frac{3}{7} \div (\frac{-1}{5})$

24. $(-\frac{1}{3})(-7\frac{1}{2})$

25. $\frac{3}{25} \div \frac{-2}{15}$

26. $-3\frac{1}{2} \cdot 1\frac{1}{2}$

27. $-\frac{1}{3} \div 1\frac{1}{5}$

28. $\frac{-9}{4} \div \frac{1}{15}$

29. Pam practices the flute for $4\frac{1}{2}$ hours each week. How many hours does she practice in a month?

30. How many boards, each 2 feet 8 inches long, can be cut from a board 16 feet long?

31. How many 9 inch ribbons can be cut from $1\frac{1}{2}$ yards of ribbon?

Section 3

Express each percent as a fraction or mixed number in simplest form.

1. 5%
2. 78%
3. 2.5%
4. 1400%
5. .06 %
6. 120%

Use the percent proportion to find each number.

7. 25 is what percent of 125?
8. 14 is 20% of what number?
9. What number is 25% of 18?
10. What percent of 48 is 30?
11. 5% of what number is 3.5?
12. Find 0.5% of 250
13. 15 is what percent of 12
14. 49 is 200% of what number?
15. Kelly usually makes 85% of her shots in basketball. If she attempts 20, how many will she likely make?
16. Ryan answered 36 items correctly on a 40-item test. What percent did he answer correctly?
17. Darell told his father that he won 80% of the card games he played yesterday.. If he won 4 games, how many games did he play?
18. A glucose solution is prepared by dissolving 6 mm of glucose in a 120mm of pure solution. What is the percent of glucose in the resting solution?
19. Merideth needs to get 75% on her driving education test in order to get her license. If there are 35 questions on the test, how many does she need to answer correctly?
20. In a pet store 15 % of the animals are hamsters. If the store has 40 animals, how many of them are hamsters?

21. The table shows the number of points each student in Jim's study group earned on a recent math test. There were 88 points possible on the test. Express al answers to the nearest tenth of a percent.

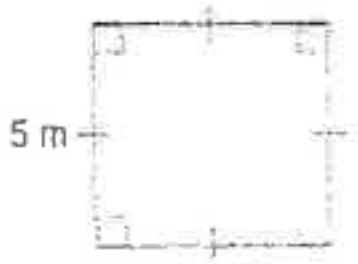
Names	Jim	Pam	Dwight	Angela	Andy
Scores	72	68	81	87	75

a) Find Jim's percent on the test?
b) Find Dwight's percent on the test?
c) Find Andy's percent on the test?
d) What was the percent difference between Dwight and Angela?
e) What was the lowest percentage?

Section 4

Find the perimeter of each figure

1.



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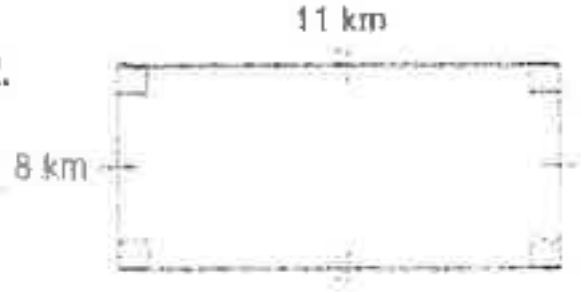

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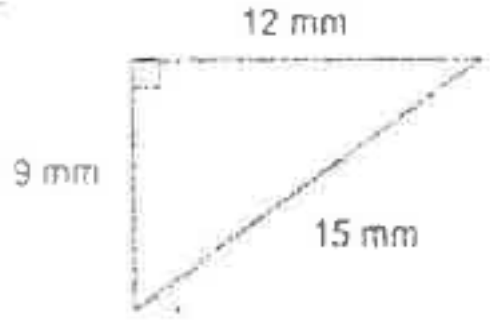


5. A square with a side length of 8 inches

6. A rectangle with length 9 cm and width 3cm

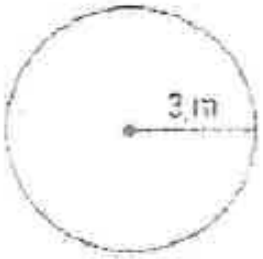
7. A triangle with sides 4 feet, 13 feet, and 12 feet

8. A parallelogram with side lengths of $6\frac{1}{4}$ inches and 5 inches

9. a quarter circle with radius of 7 inches

Find the circumference of each circle. Round to the nearest tenth.

10.



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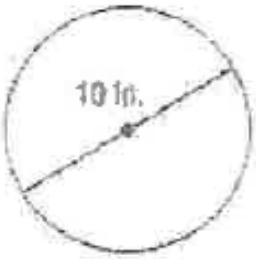

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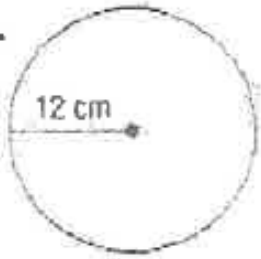


13. A square garden has a side length of 5.8 meters. What is the perimeter?

14. A rectangular room is $12\frac{1}{2}$ feet wide and 14 feet long. What is the perimeter of the room?

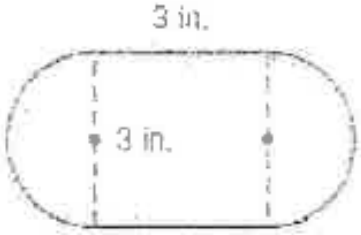
15. The tire for a 10-speedbicyce has a diameter of 27 inches. Find the distance traveled in 10 rotations of the tire. Round to the nearest tenth.

16. The Earth's circumference is approximately 25,000 miles. If you could dig a tunnel to the center of the Earth, how long would the tunnel be? Round to the nearest tenth mile.

Find the perimeter of each figure. Round to the nearest tenth.

17.

18.



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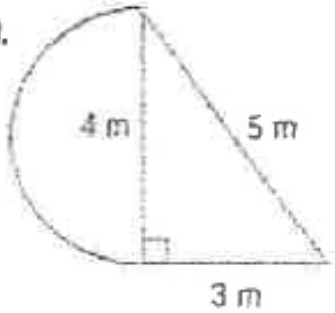
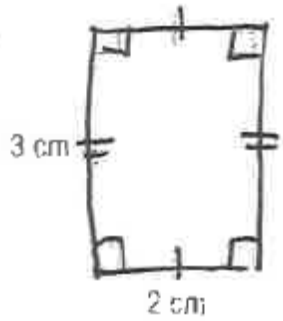
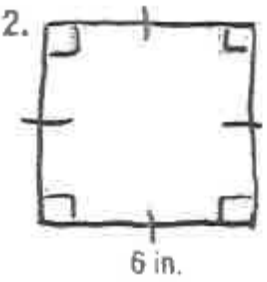


Section 5

Find the area of each figure.

1. 

2. 

3. 

Find the area of each figure. Round to the nearest tenth if necessary.

4. A triangle with a base of 12 mm and a height of 11 mm

5. A square with a side length of 15 feet

6. A rectangle with a length of 22 cm and a width of 11 cm

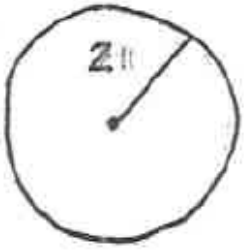
7. A triangle with a base of 6 feet and a height of 3 feet

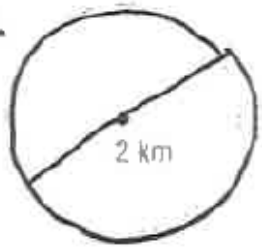
8. A quarter circle with a diameter of 4 meters

9. A semi circle with a radius of 3 inches

Find the area of each circle. Round to the nearest tenth.

10. 

11. 

12. 

13. The radius is 4 cm

14. The radius is 7.2 mm

15. The diameter is 16 inches

16. The diameter is 25 feet

17. The square floor has an area of 49 square feet. What is the length of the floor?

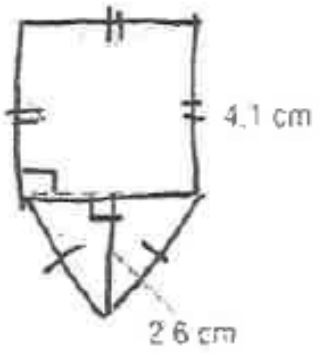
18. Area of a circle is 121π. What is the diameter?

19. The area of a triangle is 1242 cm and the base of the triangle is 46 cm. What is the height of the triangle?

20. Which is larger? The area of a circle with a radius of 4 cm, or a square with a side length of 7 cm?

Find the area of each figure. Round to the nearest tenth.

21.



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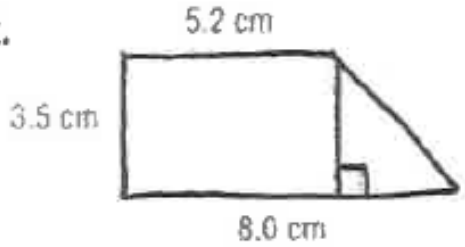


23.

Section 6

Find the volume of each rectangular prism given the length, width, and height.

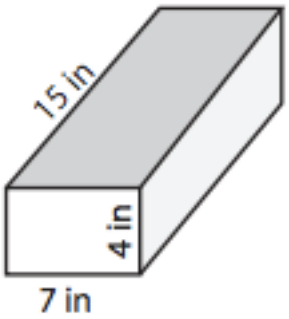
1. length = 5cm , width =3cm , height = 8cm

2. length = 10m , width =10m , height = 1m

3. length = 16yd , width =20yd , height = 4yd

4. length = 25 ft , width = 3ft , height = 18ft

5.



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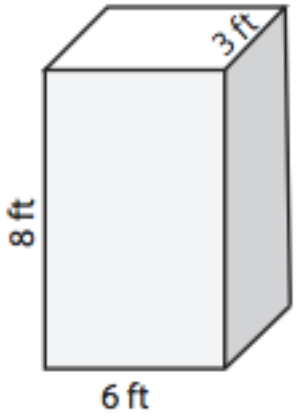

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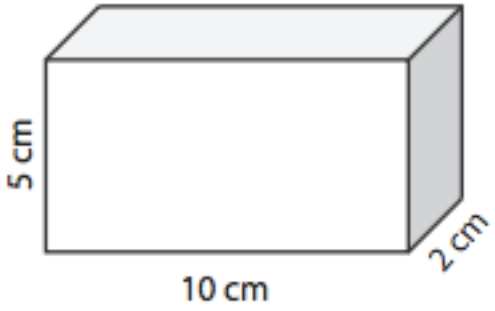

8. A cube that measures 3 m on each side.

9. An aquarium is 8 feet long, 5 feet wide, and 5.5 feet deep. What is the volume of the aquarium?

10. A cardboard box is 32 inches long, 22 inches wide, and 16 inches tall. What is the volume of the box?

11. A rectangular cake pan has a volume of 234 cubic inches. If the length of the pan is 9 inches and the width is 13 inches, what is the height of the pan?

12. A children's rectangular pool holds 480 cubic feet of water. What is the depth of the pool if its length is 30 feet and its width is 16 feet?

Section 7

One coin is randomly selected from a jar containing 70 nickels, 100 dimes, 80 quarters, and 50 one-dollar coins. Find each probability.

1. P(quarter) 2. P(dine) 3. P(quarter or nickel)

4. P(greater than $0.10) 5. P(less than $1.00) 6. P(at most $1.00)

Use a tree diagram to find the sample space for each event. State the number of possible outcomes.

7. A chess club must decide when to meet. The possible days are Monday, Wednesday and Thursday. The possible times are 3:00pm, 4:00pm, and 6:00pm. What are the possible meeting times?

8. At a restaurant, you choose to have two sides with breakfast. You can choose white or whole wheat toast. You can choose sausage, bacon, or hash browns. What are the possibilities?

A bag is full of different colored marbles. The probability of randomly selecting a red marble from the bag is $\frac{1}{8}$. the probability of selecting blue marble from the bag is $\frac{4}{9}$

Find each probability.

9. P(not red) 10. P(red then a blue) 11. P(not blue)

Find the ODDS f each outcome if a computer randomly picks a letter in the name THE UNITED STATES OF AMERICA

12. the letter A 13. the letter T 14. a vowel

15. a consonant 16. the letter Y