Summer 2020 Review of MP1 - MP3 SY2019-2020

1) A recipe calls for 2/3 cup of chopped onions and 1/4 of a cup of chicken broth per serving. If you want to make 2.5 servings, how much total onions and broth will you need?

2) One week in winter it snowed 2.4 inches on Monday, snowed 3.85 inches on Tuesday, rained 1.3 inches on Wednesday, snowed 2.48 inches on Thursday and rained 3.79 inches on Friday. How many more inches did it snow than rain that week?

Find each square root.

3) \(-\sqrt{169}\)  
4) \(\sqrt{256}\)

5) \(\sqrt{324}\)  
6) \(\sqrt{225}\)

7) Which of the following are perfect squares? 

20 64 85 100 121 150 160 200 265 289 300 343 390 400

8) How far apart are -1/8 and 3/4 on a number line?

9) Why is the absolute value of -1/2 the same as the absolute value of 1/2?

Evaluate each using the values given.

10) \(xy - x + xy\); use \(x = -2\), and \(y = \frac{1}{3}\)

11) \((-3)(|−4x|) - y\); use \(x = 2\), and \(y = -1\)

12) \(m^2 + (n)(−1 - m)\); use \(m = \frac{2}{3}\), and \(n = -2\)

13) \(m^2 + |p| - n\); use \(m = 5\), \(n = -\frac{1}{2}\), and \(p = 1\)

Solve each equation.

14) \(\frac{a - 4}{-2} = -7\)

15) \(-26 = -13 + \frac{n}{2}\)
16) For a field trip 25 students rode in cars and the rest filled five buses. How many students were in each bus if 310 students were on the trip?

17) How old am I if 500 reduced by 3 times my age is 290?

18) What does it mean to say that 6 is a solution to the equation: \(2x - 5 = 7\)?

List 5 different values that are solutions to the inequality graphed below.

19) \(-7 \leq x \leq 7\)

Solve each inequality and graph its solution.

20) \(10 < 6 + \frac{x}{3}\)

21) \(-2n - 2 \leq 16\)

22) What is 10% of 86?

23) What is 20% of 86?

24) What is 5% of 86?

25) What is 25% of 86?

26) Mark bought a pair of sneakers that were on sale for 20% off. They shoes originally cost $85. In addition to the discount, Mark had to pay 6% in sales tax. How much did Mark pay for the shoes?

27) If 1 inch = 2.54 cm, how many cm are there in 4.5 inches?

Answer each question and round your answer to the nearest whole number.

28) Shanice bought 15 red potatoes for $6. How many red potatoes can Jack buy if he has $2?

29) The money used in Oman is called the Rial. The exchange rate is $6 for every 2 Rials. Find how many Rials you would receive if you exchanged $48.

Answer each question. Round your answer to the nearest tenth. Round dollar amounts to the nearest cent.

30) Shreya bought 12 bags of potatoes for $17.88. How many bags can Pranav buy if he has $4.47?

31) Jose reduced the size of a painting to a width of 3.5 in. What is the new height if it was originally 10.5 in wide and 2.7 in tall?
Each pair of figures is similar. Find the missing side.

32) \[
\begin{array}{c}
\text{18} \\
\times \\
\text{2} \\
\text{4}
\end{array}
\] \\

33) \[
\begin{array}{c}
\text{x} \\
\text{7} \\
\text{20} \\
\text{35}
\end{array}
\]

Answer each question and round your answer to the nearest whole number.

34) If a 9 ft tall tent casts a 6 ft long shadow, then how long is the shadow that a 6 ft tall car casts?

35) Michaela babysits for her neighbor. One night she earned $30 for working for 4 hours. The money she earns is proportional to the number of hours she works.
   a) What is the slope of this proportional relationship?
   b) Write an equation in the form \( y = mx \) that represents this relationship.

36) Graph the proportional relationship which contains the point (-6, -2) with a rate of change of 1/3.

37) Graph the line representing the proportional relationship \( y = 5x \).
38) Graph the line representing the proportional relationship \( y = \frac{2}{3}x \).

39) Amanda is six years older than her younger brother Nathan.

   a) What is the y-intercept in this additive relationship?

   b) Write an equation in the form \( y = x + b \) that represents this relationship.

40) Graph the line representing the additive relationship with a y-intercept of \((0, -4)\) that goes through the point \((2, -2)\).

41) Graph the line representing the additive relationship \( y = x + 7 \).

42) There are 26 letters in the alphabet. Five of these are vowels, the rest are consonants. If you choose a letter at random, what is the probability you choose a consonant?

43) Suppose you roll a six-sided die. What is the probability of rolling a prime number?

44) Jorge flipped a coin 20 times. The coin landed heads 12 times and tails 8 times. What is the experimental probability of the coin landing tails?

45) How are experimental probability and theoretical probability related?

46) Construct a histogram for the following data on test scores from a French class:

   85  88  92  70  73  85  95  100
   72  65  90  90  93  78  77  91
   82  80  71  89  86  85  84  93

47) How are histograms similar to and different than:

   a) line plots?

   b) stem-and-leaf plots?

   c) circle graphs?
Find the volume of each figure. Round to the nearest tenth.

48) 

49) 

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

50) 

51) 

52) Julie is painting the four walls of her bedroom. Her bedroom is a rectangular prism with height 8 ft, length 15.5 ft, and width 12 ft. If her door and windows (which she won't paint) total 48 square feet, how many square feet of paint will she need?

53) Sam made soup to give to his teachers for the end of the school year. If the jars he is using to hold the soup have a diameter of 40 cm and a height of 55 cm, how many cubic cm of soup will each jar hold?

54) Max loves Lucky Charms. The cereal box is 18 inches high, 3 inches wide, and 14 inches long. How much cereal does the box hold?

55) Sam is creating labels to put on the soup jars he is giving his teachers. These jars have a diameter of 40 cm and a height of 55 cm. If the label covers everything except the lid and base, how much paper will he need for each label?