

**Algebra
8th Grade****Summer Work 2020****Find the sum. Write your answer in simplest form.**

1. $-\frac{5}{4} + \frac{5}{4}$

2. $-2.7 + (-7.5)$

3. The table shows the change in the water level (in centimeters) of a reservoir for three months. Find the total change in the water level for the three-month period.

Month	1	2	3
Change in Water Level	$-1\frac{1}{3}$	$\frac{21}{80}$	$-\frac{11}{80}$

Find the difference. Write your answer in simplest form.

4. $-\frac{4}{3} - \frac{7}{3}$

5. $9.49 - (-2.4)$

6. At 1 P.M., the total snowfall is 3 centimeters. At 4 P.M., the total snowfall is 8 centimeters. What is the mean hourly snowfall?

7. Write
- $\frac{19}{2}$
- as a decimal.

Find the product. Write your answer in simplest form.

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

9. -6.3×7.2

Find the quotient. Write your answer in simplest form.

10. $\frac{2}{3} \div \left(-\frac{6}{7}\right)$

11. $-6.7 \div 2.5$

12. Evaluate
- $\frac{-\frac{9}{5}}{\frac{1}{5}+1}$
- . Write your answer in simplest form.

13. An online retailer allows customers to rate items. An item receives scores of 2.75, -4.75, -1, 2.25, -4, 0.25, 4.75, and -2.25. Find the mean score.

14. Simplify
- $\frac{5}{6}x - 11 - \frac{1}{2}x - 11$
- .

15. Each person in a group buys a movie ticket, a drink, and a popcorn. How much does the group pay when there are 5 people in the group?

Item	Ticket	Drink	Popcorn
Price	\$5.00	\$3.75	\$3.50

Simplify.

16. $\left(\frac{3}{4}x - 6\right) - \left(\frac{1}{2}x - 8\right)$

17. $\frac{1}{4}(12x + 12) + 8x$

18. Factor $\frac{1}{4}$ out of $\frac{1}{4}x + \frac{3}{4}$.

19. Solve $\frac{x}{8} - \frac{5}{2} = \frac{5}{2}$.

Summer Work 2020 (continued)

20. You install 404 feet of fencing along the perimeter of a rectangular yard. The width of the yard is 100 feet. What is the length of the yard?
21. In a game, you pilot a spaceship and gain a point for every asteroid you destroy. The game ends when your ship is hit by an asteroid. You already have 94 points. Graph your possible final scores for the game.

Graph the solution of the inequality.

22. $x - 4 < 2$ 23. $3x < 21$ 24. $\frac{x}{4} + 2 < 1$
25. A person jogs $\frac{1}{7}$ mile in $\frac{1}{56}$ hour. What is the person's speed in miles per hour?
26. Tell whether $25 : 2$ and $3 : 8$ form a proportion.
27. A graph shows the speed of a vehicle, where x is the time (in minutes) and y is the distance (in kilometers). The graph is a line through the points $(1, \frac{2}{3})$ and $(2, 1\frac{1}{3})$. Find the speed in kilometers per minute.
28. Write an equation for the proportional relationship shown in the table.

x	0.5	1	1.5	2
y	37	74	111	148

29. Find the constant of proportionality k in the equation $y = 38x$.
30. A scale drawing of a square has a side length of 2 centimeters. The drawing has a scale of 1 cm : 8 ft. Find the actual perimeter and area of the square.
31. Write 76% as a decimal. 32. Write 0.51 as a percent.
33. You estimate that there are 66 marbles in a jar. The actual amount is 89 marbles. Find the percent error. Round to the nearest tenth of a percent.
34. Find the selling price of a \$50 item after a 50% markup.
35. You deposit \$300 in a savings account. The account earns 1% simple interest per year. What is the interest earned after 3 years? the balance after 3 years?
36. The probability of an event is $\frac{1}{4}$. Describe the likelihood of the event.
37. Use the table to find the relative frequency of spinning a 6 on a spinner.

Number Spun	1	2	3	4	5	6
Times Spun	10	10	8	7	8	7

**Algebra
8th Grade**

Summer Work 2020 (continued)

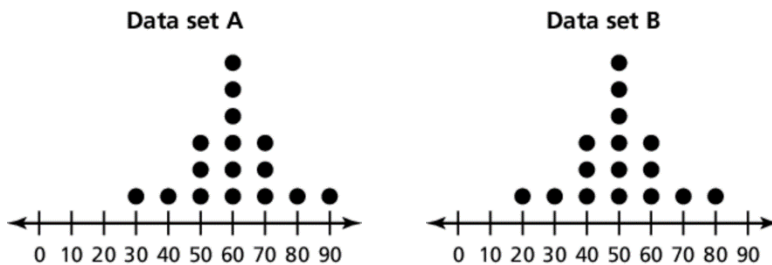
38. There are 11 green marbles and 12 orange marbles in a bag. You randomly choose one of the marbles. What is the probability of choosing a green marble?
39. The table shows the results of rolling a number cube 200 times. How does the experimental probability of rolling an odd number compare with the theoretical probability?

Number Rolled	1	2	3	4	5	6
Times Rolled	38	25	30	41	34	32

40. Find the total number of possible outcomes when you select one color of wallpaper and one color of carpet.

Wallpaper	Purple, Blue, Red, Green
Carpet	Purple, Red, Yellow, Blue, Green

41. You roll a six-sided number cube and flip a coin. What is the probability of rolling a number greater than 5 and flipping heads?
42. A couple plans to have 5 children. The gender of each child is equally likely. Design a simulation involving 113 trials that you can use to model the genders of the children.
43. You want to estimate the number of students in your school who support extra funding for the music club. You survey every sixth student who enters the school. Determine whether the sample is *biased* or *unbiased*.
44. You ask 200 randomly chosen students to name their favorite ice cream flavor. Of the students you asked, 49 said vanilla, 59 said chocolate, 56 said strawberry, and 36 said chocolate chip. There are 1800 students in the school. Estimate the number of students in the school whose favorite ice cream flavor is chocolate.
45. The dot plots show two data sets. Express the difference in the measures of center of data set A and data set B as a multiple of the measure of variation.



46. The tables show random samples of the ages of viewers of two different movies.

Movie A				
31	22	25	26	24
29	23	29	27	30
29	26	30	28	28
28	28	27	32	26
27	25	27	26	27
29	27	25	24	25

Movie B				
42	43	40	41	43
40	44	39	39	41
38	37	38	39	45
46	41	42	39	41
41	42	42	41	43
40	40	43	44	36

- a. Describe the shapes of the distributions of the viewer ages for each movie.
- b. Find the appropriate measures of center and variation for each distribution.
- c. Compare the ages of viewers of the two movies.

47. Find the circumference of a circle with a radius of 8 kilometers. Use 3.14 or $\frac{22}{7}$ for π .

48. Find the area of a circle with a diameter of 26 inches. Use 3.14 or $\frac{22}{7}$ for π .

49. Solve $\frac{1}{5}x + \frac{2}{5}x - 12 = 3$.

50. Solve $-6(8 - 7x) = 5(7x - 4)$

51. How many solutions does the equation $-\frac{1}{5}(25x + 10) = -2 - 5x$ have?

52. The profit y (in dollars) for a business from selling x hats is represented by $y = 9x$. Graph the equation.

53. The distance y (in miles) that Train A travels in x hours is represented by the equation $y = 64x$. The distance that Train B travels is represented by a graph of a line through the points $(0, 0)$ and $(1, 60)$. Which train is faster?

