Summer Work

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.

<table>
<thead>
<tr>
<th>Month</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change in Water Level</td>
<td>(-\frac{13}{80})</td>
<td>(\frac{21}{80})</td>
<td>(-\frac{11}{80})</td>
</tr>
</tbody>
</table>

Find the difference. Write your answer in simplest form.
4. \(-\frac{4}{3} - \frac{7}{3}\)  5. \(9.49 - (-2.4)\)

6. It started snowing at 1 P.M. At 6 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. \(-\frac{3}{8} \times (-\frac{3}{5})\)  9. \(-6.3 \times 7.2\)

Find the quotient. Write your answer in simplest form.
10. \(\frac{2}{3} \div (-\frac{6}{7})\)  11. \(-6.7 \div 2.5\)
12. Evaluate $\frac{9}{5 + 1}$. 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 the expressions
   a. $12 - 5y + 21 + y - 23$
   b. $\frac{5}{6}x - 11 - \frac{1}{2}x - 11$.

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?

<table>
<thead>
<tr>
<th>Item</th>
<th>Ticket</th>
<th>Drink</th>
<th>Popcorn</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price</td>
<td>$5.00</td>
<td>$3.75</td>
<td>$3.50</td>
</tr>
</tbody>
</table>

   a. $\left(\frac{3}{4}x - 6\right) - \left(\frac{1}{2}x - 8\right)$
   b. $\frac{1}{4}(12x + 12) + 8x$

18. Factor 4 out of $4x + 12$.

19. Solve
   a. $-7x = -5.6$
   b. $4x + 5 = -23$
   c. $\frac{x}{8} - \frac{5}{2} = \frac{5}{2}$.
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?

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?


27. A graph shows the speed of a vehicle, where \(x\) is the time (in hours) and \(y\) is the distance (in kilometers). The graph is a line through the points (2, 74) and (3, 111). Find the speed in kilometers per hour.

28. Write an equation for the proportional relationship shown in the table.

<table>
<thead>
<tr>
<th>(x)</th>
<th>0.5</th>
<th>1</th>
<th>1.5</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>(y)</td>
<td>37</td>
<td>74</td>
<td>111</td>
<td>148</td>
</tr>
</tbody>
</table>

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? Use the formula I = prt.

36. Find the circumference of a circle with a radius of 8 kilometers. Use 3.14 or \(\frac{22}{7}\) for \(\pi\).

37. Find the area of a circle with a diameter of 26 inches. Use 3.14 or \(\frac{22}{7}\) for \(\pi\).

38. Can you construct a triangle with side lengths of 1 meter, 7 meters, and 8 meters? Explain.