1. Which of the following values is equivalent to \( \sqrt{\frac{16}{49}} \)?
   A. \( \frac{4}{7} \)
   B. \( \frac{7}{4} \)
   C. \( \frac{16}{49} \)
   D. \( \frac{16}{49} \)

2. A car’s mileage is 25 miles per gallon of gasoline. At this rate, how many gallons of gasoline are needed for the car to travel 150 miles?
   A. 3.750 gallons
   B. 3.75 gallons
   C. 6 gallons
   D. 60 gallons

3. Which of the following expressions is equivalent to \( \frac{\sqrt{\frac{16}{49}}}{\sqrt{\frac{1}{x^2}}} \)?
   A. \( x^9 \)
   B. \( x^{11} \)
   C. \( x^{12} \)
   D. \( x^{24} \)

4. \( 2(2x + 7) + 2x + 4 \)
Which of the following is equivalent to the expression above?
   A. \( 6x + 11 \)
   B. \( 6(x + 3) \)
   C. \( 4x + 11 \)
   D. \( 4x + 13 \)

5. This chart shows the values of a linear function \( f(x) \) for certain values of \( x \). Which of the following equations correctly defines the function \( f(x) \)?

<table>
<thead>
<tr>
<th>( x )</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>( f(x) )</td>
<td>7</td>
<td>9</td>
<td>11</td>
<td>13</td>
<td>15</td>
</tr>
</tbody>
</table>

   A. \( f(x) = x + 6 \)
   B. \( f(x) = 3x \)
   C. \( f(x) = 7x - 6 \)
   D. \( f(x) = 2x + 5 \)

6. A vat contains a certain amount of water. Starting at 12:00, additional water is poured into the vat at a constant rate. The height of the water in the vat, \( h \) (in inches), can be represented by the equation \( h = 2t + 3 \), where \( t \) is the amount of time since 12:00 (in hours). Which of the following is the best interpretation of the number 3 in the equation?
   A. The amount of water, in inches, that is poured into the vat every hour
   B. The total amount of water, in inches, that is in the vat after \( t \) hours
   C. The total amount of water, in inches, that is in the vat after 1 hour
   D. The amount of water, in inches, that was already in the vat before 12:00

7. A couple has 4 children. Here is the sample space of possible outcomes for the gender of each child (where B=boy, G=girl):

\{BBBB, BBBG, BBGB, BBGG, BGBB, BGBG, BGGB, BGGG, GBBB, GBBG, GBGB, BGGB, GGBG, GGBB, GGGG\}

What is the probability that the couple has more boys than girls?
   A. \( \frac{1}{2} \)
   B. \( \frac{5}{16} \)
   C. \( \frac{11}{16} \)
   D. \( \frac{3}{4} \)

8. \( P = \{5, 10, 25, 40, 50\} \)
   \( Q = \{10, 20, 30, 40\} \)
   \( R = \{5, 10, 15, 20\} \)

Sets \( P \), \( Q \), and \( R \) are shown above. Which of the following sets represents \( P \cap (Q \cup R) \), the intersection of \( P \) with the union of \( Q \) and \( R \)?
   A. \( \{5, 10, 40\} \)
   B. \( \{10\} \)
   C. \( \{5, 10, 20, 25, 40, 50\} \)
   D. \( \{5, 10, 15, 20, 25, 30, 40, 50\} \)
ACCUPLACER QAS Practice Questions, cont.

9. A student takes four tests in a course. The first three test scores are 89, 72, and 78. What is the minimum score that the student needs to get on the fourth test to get a mean score of 80?
   A. 85
   B. 83
   C. 81
   D. 79

10. The surface area of a three-dimensional shape is the sum of the areas of all the sides of the shape. If each side of a cube has an area of 36 m², what is the surface area of the cube?
   A. 216 m²
   B. 108 m²
   C. 36 m²
   D. 6 m²

**QAS Answer Key**

1. A
2. C
3. C
4. B
5. D
6. D
7. B
8. A
9. C
10. A