Countdown: 18 Weeks

1. Imani is analyzing numbers. 8.NS.1, 8.NS.2

   **Part A:** Select whether the number in each situation is rational or irrational.

<table>
<thead>
<tr>
<th>Rational</th>
<th>Irrational</th>
</tr>
</thead>
<tbody>
<tr>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

   A circumference of a circular picture frame is \(5\pi\), or 15.7079632..., inches.

   A bottle contains 0.6 kiloliters of water.

   The sales tax on a purchase was 6.25%.

   The net change in Patrick's stock was \(-$11\).

   **Part B:** The diagonal of a rectangular carpet is \(6\sqrt{3}\) feet long. Estimate the length of the diagonal to the nearest tenth of a foot. Then explain why you can only estimate the length, not find its exact value.

   

2. Enrique says that the value of \(\sqrt{\frac{1}{x}}\) is a rational number for any positive, nonzero integer value of \(x\). Select all of the values of \(x\) that could be used as counterexamples to show that Enrique's conjecture is false. 8.NS.1

   - [ ] \(x = 1\)
   - [ ] \(x = 2\)
   - [ ] \(x = 4\)
   - [ ] \(x = 5\)
   - [ ] \(x = 8\)
   - [ ] \(x = 9\)
3. The table shows the approximate populations of four capital cities in the United States. Write the correct city to make each statement true. 8.EE.1

<table>
<thead>
<tr>
<th>City</th>
<th>Augusta, Maine</th>
<th>Cheyenne, Wyoming</th>
<th>Jackson, Mississippi</th>
<th>Montpelier, Vermont</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population (approx.)</td>
<td>$3^9$</td>
<td>$3^{10}$</td>
<td>$3^{11}$</td>
<td>$3^8$</td>
</tr>
</tbody>
</table>

- The population of __________ is about $\frac{1}{3}$ the population of Jackson.
- The population of __________ is about 3 times the population of Montpelier.
- The population of __________ is about 27 times the population of __________.

4. The number line shows four points labeled $A$, $B$, $C$, and $D$. Select whether each statement is true or false. 8.NS.2

Think Smart for SBAC
On the actual test, you might be asked to click the appropriate box for each statement. In this book, you will be asked to shade in the boxes instead.

<table>
<thead>
<tr>
<th>True</th>
<th>False</th>
</tr>
</thead>
</table>

- $\sqrt{50}$ is between point $A$ and point $B$.
- The coordinate of point $C$ is less than $\sqrt{60}$.
- The coordinate of point $D$ is greater than $\sqrt{63}$.

5. City Cab Company charges $3.00 per ride plus $2.00 per mile traveled. Metro Cab Company charges $1.50 per ride plus $2.50 per mile traveled. Write an equation to find $m$, the number of miles for which the total cost is the same for both taxi companies. Then solve the equation to find the number of miles when the cost is the same, and state what that cost is. 8.EE.7, 8.EE.7b

Equation: __________

$m = __________$ miles

Cost for that number of miles: __________