Think Smart for the Smarter Balanced Assessment

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- Chapter Tests in SBAC Format
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1. Quentin posted a video of his kitten on a Web site. The table shows the total number of “likes” his video had received by the end of each day over the course of a week. 8.F.4

<table>
<thead>
<tr>
<th>Days Since Upload</th>
<th>1</th>
<th>3</th>
<th>5</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Number of “Likes”</td>
<td>5,400</td>
<td>6,200</td>
<td>7,000</td>
<td>7,800</td>
</tr>
</tbody>
</table>

**Part A:** Graph the points on the coordinate plane to show the relationship.

**Part B:** The pattern shown in the graph continues. How many “likes” will Quentin’s video have by the end of the 8th day since the upload?

2. Different types of functions have different characteristics.

**Part A:** Write what type of function is represented. 8.F.3

<table>
<thead>
<tr>
<th>x</th>
<th>y</th>
</tr>
</thead>
<tbody>
<tr>
<td>−8</td>
<td>−2</td>
</tr>
<tr>
<td>−2</td>
<td>2.5</td>
</tr>
<tr>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>10</td>
<td>11.5</td>
</tr>
</tbody>
</table>

**Part B:** Choose a linear function above. Describe how you could change the representation of that linear function to make it nonlinear.
3. The radius of a circle with area $A$ can be approximated using the formula $r = \sqrt{\frac{A}{3}}$. A circular tabletop has an area of 42 ft$^2$. 8.NS.2

**Part A:** Use the number line to estimate the radius of the tabletop. What square root is the radius? Between which two points that represent the square roots of perfect squares is the radius located?

![Number line with square roots](image)

**Part B:** What is the estimated radius of the tabletop to the nearest foot? Explain how you found your answer.

![Radius estimation](image)

Think Smart for SBAC
On the actual test, you might be asked to use a keypad with math symbols to enter the answer. In this book, you will be asked to write in the space provided.

4. The Caspian Sea has an area of 371,000 square kilometers. Lake Superior has an area of $8.24 \times 10^4$ square kilometers. Complete each sentence to make a true statement. 8.EE.4

The area of ____ is greater than the area of ____.

The difference in the areas of the two lakes is ____ square kilometers.

5. A fish tank full of water is being emptied so it can be cleaned. The table shows how the volume of water in the tank changes over time. Select whether each statement is true or false. 8.F.4

<table>
<thead>
<tr>
<th>Time (min)</th>
<th>0</th>
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<th>8</th>
<th>12</th>
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<tr>
<td>Volume (gal)</td>
<td>20</td>
<td>18</td>
<td>16</td>
<td>14</td>
</tr>
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</table>

**True**  **False**

☐ ☐ The initial amount of water in the tank was 0 gallons.

☐ ☐ The amount of water in the tank decreases at a rate of 0.5 gallon every minute.

☐ ☐ There were 19 gallons of water in the tank after 1 minute.

☐ ☐ There were 15 gallons of water in the tank after 10 minutes.
3. The radius of a circle with area $A$ can be approximated using the formula $r = \sqrt{\frac{A}{\pi}}$. A circular tabletop has an area of 42 ft$^2$. 8.NS.2

**Part A:** Use the number line to estimate the radius of the tabletop. What square root is the radius? Between which two points that represent the square roots of perfect squares is the radius located?

The radius is $\sqrt{4.5}$, It is located between $\sqrt{4}$ and $\sqrt{9} = 3$.

**Part B:** What is the estimated radius of the tabletop to the nearest foot? Explain how you found your answer.

4 ft; Sample answer: $\sqrt{4.5}$ is closer to $\sqrt{9} = 3$ than it is to $\sqrt{4}$, so the radius is closer to 4.

288,600 or $2.886 \times 10^5$ square kilometers.

4. The Caspian Sea has an area of 371,000 square kilometers. Lake Superior has an area of $8.24 \times 10^4$ square kilometers. Complete each sentence to make a true statement. 8.EE.4

The area of the Caspian Sea is greater than the area of Lake Superior.

The difference in the areas of the two lakes is $288,600$ or $2.886 \times 10^5$ square kilometers.

5. A fish tank full of water is being emptied so it can be cleaned. The table shows how the volume of water in the tank changes over time. Select whether each statement is true or false. 8.F.4

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True False
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