TIPS FOR TAKING THE TEST

Here are some suggestions to help you do your best:

• Be sure to read carefully all the directions in the test book.
• You may use your tools to help you solve any problem on the test.
• Read each question carefully and think about the answer before writing your response.
• Be sure to show your work when asked. You may receive partial credit if you have shown your work.
• Use your calculator to help you solve the problems on this part of the test.

This picture means that you will use your ruler.

This picture means that you will use your protractor.
**FORMULAS**

**Circle**

- Area = \( \pi r^2 \)
- Circumference = \( 2\pi r \)

**Cube**

- Total Surface Area = \( 6s^2 \)
- Volume = \( s^3 \)

**Right Circular Cylinder**

- Total Surface Area = \( 2\pi rh + 2\pi r^2 \)
- Volume = \( \pi r^2h \)

**Right Rectangular Prism**

- Total Surface Area = \( 2wl + 2lh + 2wh \)
- Volume = \( lwh \)

**Right Triangular Prism**

- Total Surface Area = \( wh + lw + lh + ls \)
- Volume = \( \frac{1}{2}wh \times l \)

**CONVERSIONS**

- 1 centimeter = 10 millimeters
- 1 meter = 100 centimeters = 1,000 millimeters
- 1 kilometer = 1,000 meters
- 1 gram = 1,000 milligrams
- 1 kilogram = 1,000 grams
- 1 pound = 16 ounces
- 1 ton = 2,000 pounds
- 1 cup = 8 fluid ounces
- 1 pint = 2 cups
- 1 quart = 2 pints
- 1 gallon = 4 quarts
- 1 liter = 1,000 milliliters
- 1 kiloliter = 1,000 liters

New York State Testing Program
The temperature in St. Cloud, Minnesota, was $-4^\circ F$ (Fahrenheit) on January 27 and $13^\circ F$ on January 28.

**Part A**

On the number line below, plot the temperatures for January 27 and January 28. Be sure to label both points with the appropriate date.

![Number line with temperatures plotted]

**Part B**

How many degrees warmer was it on January 28 than on January 27?

*Show your work.*

**Answer** ________________ $^\circ F$
The table below shows geographic information about Antarctica.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ANTARCTICA</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Area</strong></td>
<td>$1.4 \times 10^7$ square kilometers</td>
</tr>
<tr>
<td><strong>Lowest elevation</strong></td>
<td>$-2.56 \times 10^3$ meters</td>
</tr>
</tbody>
</table>

Write the numbers, in standard form, for the area and the lowest elevation of Antarctica.

**Answer**

- area $\phantom{-}1.4 \times 10^7$ square kilometers
- lowest elevation $\phantom{-}2.56 \times 10^3$ meters
Chris must paint the cylindrical tank shown below.

\[ \begin{align*}
  h &= 5 \text{ ft} \\
  r &= 2 \text{ ft}
\end{align*} \]

[not drawn to scale]

**Part A**

What is the surface area of the entire tank to the nearest square foot?

*Show your work.*

Answer \[ \underline{\phantom{00}} \text{ square feet} \]

**Part B**

One can of paint will cover 25 square feet. How many cans of paint must Chris purchase to paint the entire surface area of the tank?

*Show your work.*

Answer \[ \underline{\phantom{00}} \text{ cans of paint} \]
Juan attends a carnival. The admission fee is $8. Tickets for rides cost $4 each. Juan needs one ticket for each ride. Write an equation Juan can use to determine the number of ride tickets, $r$, he can buy if he has $32 before he pays the admission fee.

**Equation**

Using the equation above, find the number of tickets Juan can buy.

*Show your work.*

**Answer** ride tickets
The planter below contains 8 pounds of dirt.

Estimate the weight of the dirt in the planter when the planter is completely filled.

Estimation _______________ pounds

On the lines below, describe how you can estimate the weight of the dirt without using a ruler.
The customer service department of a software company recorded the number of daily phone calls it received about a new product. The table below shows the data recorded each day during the first week and the tenth week.

**NUMBER OF PHONE CALLS**

<table>
<thead>
<tr>
<th>Day</th>
<th>Week 1</th>
<th>Week 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>38</td>
<td>23</td>
</tr>
<tr>
<td>Tuesday</td>
<td>41</td>
<td>17</td>
</tr>
<tr>
<td>Wednesday</td>
<td>36</td>
<td>20</td>
</tr>
<tr>
<td>Thursday</td>
<td>29</td>
<td>19</td>
</tr>
<tr>
<td>Friday</td>
<td>32</td>
<td>14</td>
</tr>
</tbody>
</table>
On the grid below, create a double-bar graph that shows the number of phone calls received each day during the first week and the tenth week.

Be sure to

- title the graph
- label the axes
- provide an appropriate key for the graph
- provide a scale for the graph
- graph all the data
Dean recorded the number of people who visited his web site each day for a week. He graphed the data in two different ways.

Which one of the two graphs is misleading?

*Answer* ________________
On the lines below, explain why the graph you chose is misleading.
The table below shows the number of Earth days it takes for two of Jupiter’s moons to make one full orbit around Jupiter.

<table>
<thead>
<tr>
<th>Name</th>
<th>Orbit Time (in Earth Days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Callisto</td>
<td>1.67 x 10^1</td>
</tr>
<tr>
<td>Themisto</td>
<td>1.3002 x 10^2</td>
</tr>
</tbody>
</table>

How much longer, in Earth days, does it take for Themisto to orbit Jupiter than it does for Callisto to orbit Jupiter? Write your answer in standard form.

*Show your work.*

*Answer* _______________ Earth days