**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.
- 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.

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This picture means that you will use your ruler.

This picture means that you will use your protractor.
Mathematics Reference Sheet

**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 = $wh + lw + lp + ls$
  - 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
Erin wants to make a sandwich from the main ingredients shown in the table below.

<table>
<thead>
<tr>
<th>Bread</th>
<th>Main Ingredient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sourdough (S)</td>
<td>Peanut butter (P)</td>
</tr>
<tr>
<td>Wheat (W)</td>
<td>Ham (H)</td>
</tr>
<tr>
<td>Rye (R)</td>
<td>Turkey (T)</td>
</tr>
<tr>
<td></td>
<td>Egg salad (E)</td>
</tr>
</tbody>
</table>

On the lines below, list all the possible ways Erin can make a sandwich using one type of bread and one main ingredient.
32 Jan buys 12 pens for $10. Each pen costs the same amount of money. Write a proportion to find the number of pens Jan can buy for $15. Then solve your proportion for the number of pens.

Show your work.

Answer __________________ pens

33 What is the value of the expression below when $a = 2$ and $b = 6$?

$$3a^3 + 5b^2$$

Show your work.

Answer ______________
The radius of a hydrogen atom is about 0.000000106 millimeter. Write the length of this radius in scientific notation.

**Answer** ______________ millimeter(s)

On the lines below, explain how you determined your answer.
The low temperature on Sunday was −9°F. The high temperature on Sunday was 14 degrees warmer than the low temperature.

What was the high temperature on Sunday?

**Answer** ______________ °F

The low temperature on Monday was 6 degrees warmer than Sunday's low of −9°F. The low temperature on Tuesday was 3 degrees warmer than Monday's **low**. What was the **low** temperature on Tuesday?

*Show your work.*

**Answer** ______________ °F
Lewis has a bucket with a 5-gallon capacity. Lewis puts 12 pints of soapy water in the bucket to wash his car.

How many gallons of soapy water are in Lewis’s bucket?

*Show your work.*

\[
\text{Answer} \quad \underline{\text{_________}} \quad \text{gallons}
\]

How many more quarts of soapy water will the bucket hold?

*Show your work.*

\[
\text{Answer} \quad \underline{\text{_________}} \quad \text{quarts}
\]
What is the measure of $\angle x$ in the quadrilateral below?

Show your work.

Answer ________________ degrees

Check your answer.

Show your work.
Millie recorded the prices of all the plants she sold between noon and 1 P.M. at a nursery. At the end of the hour, she reviewed her list, as shown below.

$2.95  $8.50  $12.95  $3.50  $4.50  $14.50  $12.95  $4.50  $3.50  $12.95  $8.50  $4.50

Using Millie’s list, complete the frequency table below to show how many plants were sold in each of the indicated price ranges.

Be sure to
- title the table
- label the columns
- record all the data

<table>
<thead>
<tr>
<th>Price Range</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>$0.00–$3.99</td>
<td></td>
</tr>
<tr>
<td>$4.00–$7.99</td>
<td></td>
</tr>
<tr>
<td>$8.00–$11.99</td>
<td></td>
</tr>
<tr>
<td>$12.00–$15.99</td>
<td></td>
</tr>
</tbody>
</table>

Which price range shows the least number of plants sold?

Answer $ $ ______________ to $ $ ______________