Mathematics Test
Book 2

Grade 8

March 6–12, 2008
Name ____________________
**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.

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### Mathematics Reference Sheet

#### FORMULAS

<table>
<thead>
<tr>
<th>Formula</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pythagorean Theorem</td>
<td>$c^2 = a^2 + b^2$</td>
</tr>
<tr>
<td>Simple Interest</td>
<td>$I = prt$</td>
</tr>
<tr>
<td>Distance Formula</td>
<td>$d = rt$</td>
</tr>
</tbody>
</table>

#### CONVERSIONS

**Temperature Conversions**

- $F = \frac{9}{5}C + 32$
- $C = \frac{5}{9}(F - 32)$

**Measurement Conversions**

- 1 mile = 5,280 feet
- 1 yard = 3 feet
The table below shows values for \( x \) and \( y \) when \( y = 3x - 2 \).

<table>
<thead>
<tr>
<th>( x )</th>
<th>-2</th>
<th>-1</th>
<th>0</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>( y )</td>
<td>-8</td>
<td>-5</td>
<td>-2</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

Complete the table by finding the value of \( y \) when \( x = 2 \).

Plot the ordered pairs shown in the table onto the coordinate plane below. Then draw a line connecting the points.

A point on the line has an \( x \)-coordinate of 3. What is its corresponding \( y \)-coordinate?

\( \text{Answer } \)
29 Coretta buys a pair of jeans that is on sale for 20% off. The regular price is marked as $27.00. What is the sale price of the pair of jeans?

Show your work.

Answer $ \underline{\hspace{2cm}}$

30 Rita multiplied the monomials $12a^3b^6$ and $3ab^2$ as shown below.

$$(12a^3b^6)(3ab^2) = 36a^4b^8$$

Is Rita’s answer correct? On the lines below, explain how you determined your answer.

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
In the diagram below, line \( l \) and line \( m \) are parallel.

\[
\begin{align*}
l & \parallel m \\
(5x - 28)^\circ & \quad (3x + 12)^\circ \\
\end{align*}
\]

[not drawn to scale]

Solve for \( x \).

*Show your work.*

\textit{Answer} \( x = \phantom{0} \)

What is the measure of the angle represented by \( 5x - 28 \) ?

\textit{Answer} \phantom{0} degrees
Triangle ABC and triangle A’B’C’ are plotted on the coordinate plane below.

What is the name of the transformation applied to triangle ABC that resulted in triangle A’B’C’?

*Answer* ____________________________
On the lines below, describe how the coordinates of point A changed to the coordinates of point A’.
A pool is being filled with water. It already contains 100 gallons of water and it continues to be filled at a constant rate. Complete the table below to show the number of gallons of water in the pool after 3 minutes and after 4 minutes.

<table>
<thead>
<tr>
<th>Time in Minutes (m)</th>
<th>Gallons of Water (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>1</td>
<td>120</td>
</tr>
<tr>
<td>2</td>
<td>140</td>
</tr>
</tbody>
</table>

Plot the ordered pairs from the table onto the graph paper below. Then draw a line segment connecting the points.