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 choosing your response.

This picture means that you will use your ruler.
Sample A

What is the shape of each base of a cylinder?

A  circle  
B  rectangle  
C  triangle  
D  square

Sample B

Use your ruler to help you solve this problem.

What is the area, in square centimeters, of the rectangle shown below?

A 15  
B 17  
C 30  
D 34
1. Simplify the expression below.

$$12ab + 8ab + 5ab$$

A. $3ab$

B. $25ab$

C. $25(3ab)$

D. $25 + ab$

2. In the diagram below, $AB \parallel CD$, and $EF$ intersects both lines.

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[not drawn to scale]
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What is the measure of $\angle y$?

A. $30^\circ$

B. $60^\circ$

C. $120^\circ$

D. $150^\circ$
3  Which situation is best represented by the expression \(2c - 5\)?

A  Alicia walked 2 miles fewer than 5 times the number of miles, \(c\), Courtney walked.
B  Alicia walked 5 miles fewer than 2 times the number of miles, \(c\), Courtney walked.
C  Alicia walked 2 more than 5 times the number of miles, \(c\), Courtney walked.
D  Alicia walked 5 more than 2 times the number of miles, \(c\), Courtney walked.

4  In the diagram below, line segment \(l\) and line segment \(m\) intersect at the center of the circle. What is the measure of \(\angle x\)?

![Diagram of a circle with line segments \(l\) and \(m\) intersecting at the center, with an angle marked as \(47^\circ\).]
In Mr. Jenkin’s science class, the students heated a beaker of water on a burner. When the experiment began, the temperature of the water was 20°C. After 8 minutes, the temperature was 60°C. Sixteen minutes after the start of the experiment, the temperature was 100°C and remained at 100°C for the next 8 minutes.

Which graph shows the change in temperature of the water in the beaker, $y$, over time in minutes, $x$?

- **A**
- **B**
- **C**
- **D**
6 Which term **best** describes $\overline{AC}$ in the right triangle shown below?

![Right Triangle Diagram]

A leg  
B base  
C altitude  
D hypotenuse

7 What is the measure of $\angle x$ in the diagram shown below?

![Angle Diagram]

A $23^\circ$  
B $33^\circ$  
C $113^\circ$  
D $157^\circ$
Mr. Sanders used a diagonal board to divide a rectangular garden into two equal sections as shown in the diagram below.

What is the length of the diagonal?

\[ c^2 = a^2 + b^2 \]

A 12 meters  
B 13 meters  
C 14 meters  
D 15 meters

Solve the equation below for \( x \).

\[ 9(x - 5) = 4x - 5 \]

A 8  
B 10  
C -8  
D -10

Go On
10. If \( P = a^2 + a - 1 \) and \( R = -a - 1 \), which expression represents \( P + R \)?

A. \( a^2 + 2 \)
B. \( a^2 - 2 \)
C. \( a^2 + 2a \)
D. \( a^2 + 2a - 2 \)

11. In the diagram below, \( EF \parallel GH \), and line \( k \) intersects both lines.

What is the measure of \( \angle z \)?

A. 40°
B. 50°
C. 130°
D. 140°
12. Which term best describes the transformation shown below?

A. dilation  
B. rotation  
C. reflection  
D. translation

13. Jerome surveyed 643 skateboarders and found that 209 of them preferred wood skateboards to plastic or aluminum skateboards. Based on the number of people surveyed, what is the most reasonable estimation of the percent of skateboarders who preferred wood skateboards?

A. 10%  
B. 30%  
C. 40%  
D. 50%
In the diagram below, line $x$ is parallel to line $y$, and line $z$ is a transversal.

Which angles are alternate interior angles?

A $\angle 1$ and $\angle 7$
B $\angle 3$ and $\angle 7$
C $\angle 2$ and $\angle 3$
D $\angle 4$ and $\angle 8$

Kevin reflects square $ABCD$ on a coordinate plane over the $y$-axis to create image $A'B'C'D'$. Which property changed when he created image $A'B'C'D'$?

A the measure of $\angle ABC$
B the area of square $ABCD$
C the position of figure $ABCD$
D the perimeter of square $ABCD$
In the diagram below, line \( l \) and line \( m \) are parallel.

Which equation could be used to solve for \( x \)?

A \( 6x + 3x = 15 + 21 \)
B \( 6x + 15 = 3x + 21 \)
C \( 6x + 15 + 3x + 21 = 90 \)
D \( 6x + 15 + 3x + 21 = 180 \)

Simplify the expression below.

\((x^2y^3)(x^4y^2)\)

A \( x^6y^5 \)
B \( x^8y^6 \)
C \( 2x^8y^6 \)
D \( 2x^6y^5 \)
Use your ruler to help you solve this problem.

Sonia draws a line between Los Angeles and San Diego on the map below to find the shortest distance between the two cities.

<table>
<thead>
<tr>
<th>SCALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 inch = 50 miles</td>
</tr>
</tbody>
</table>

Based on the scale, what is the distance, in miles, between the two cities?

A 25
B 50
C 100
D 150
19 Which expression is a trinomial?

A  $4x^3$
B  $7x + 12$
C  $3x^3 + 3x^2$
D  $5x^3 + 3x^2 - 11$

20 In the diagram below, AB intersects DC at point P.

[Diagram of intersecting lines labeled A, B, C, D with angle of 100° at point P.]

What is the measure of $\angle CPB$ in the figure?

A  $80^\circ$
B  $90^\circ$
C  $100^\circ$
D  $105^\circ$
21. Which is the name of the expression shown below?

\[ 2x^2y - 5x + 3 \]

A. term  
B. equation  
C. coefficient  
D. polynomial

22. What is the greatest common factor (GCF) of \(12x\) and \((3x^2 + 6x)\)?

A. 3  
B. 3x  
C. \(x + 2\)  
D. \(3x(x + 2)\)

23. The distance between two cities on a map is 2 inches. The map was drawn using the scale shown below.

\[ 1 \text{ inch} = 344 \text{ miles} \]

What is the actual distance, in miles, between the two cities?

A. 86  
B. 344  
C. 688  
D. 1,032
Tony joined a book club. He received 8 free books when he joined. The table below shows the total number of books, $n$, he had each month, $t$, since joining the club.

<table>
<thead>
<tr>
<th>Month $(t)$</th>
<th>Total Number of Books $(n)$</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>1</td>
<td>11</td>
</tr>
<tr>
<td>2</td>
<td>14</td>
</tr>
<tr>
<td>3</td>
<td>17</td>
</tr>
<tr>
<td>4</td>
<td>20</td>
</tr>
</tbody>
</table>

Which equation can be used to find the total number of books, $n$, Tony will have from the book club after $t$ months?

A $n = 8t$
B $n = 3t$
C $n = 8t + 3$
D $n = 3t + 8$

Which inequality represents the statement below?

One more than 2 times $n$ is greater than 21.

A $2n > 21$
B $n + 3 > 21$
C $2n + 21 > 1$
D $2n + 1 > 21$
26 Simplify the expression below.

\[
\frac{4x^3 + 8x^2 - 10x}{2x}
\]

A \hspace{0.5cm} 2x^2 + 4x - 5
B \hspace{0.5cm} 2x^2 + 4x - 10
C \hspace{0.5cm} 8x^3 + 4x^2 - 5
D \hspace{0.5cm} 8x^4 + 16x^3 - 10x^2

27 Sarah went on a one-day bus tour from Las Vegas to the Grand Canyon. The cost of the bus ticket was $80. She also paid 15\% of the cost of the ticket as a tip to the bus driver. What was the amount of the tip that Sarah paid the bus driver?

A \hspace{0.5cm} $5
B \hspace{0.5cm} $12
C \hspace{0.5cm} $15
D \hspace{0.5cm} $19

STOP