Part 1: Do not use a calculator during this section. Record your answers in the grids provided. You have 55 minutes to complete this section of the test.

1. Find the value of the expression when $x$ equals $-5$.
   \[(x - 4)(x + 3)\]

2. A fair 6-sided dice is marked with the numbers 1, 2, 3, 4, 5, and 6. The dice is rolled 3 times and the results are added. How many different sums are possible?

3. In the figure, line $l$ is parallel to line $m$. What is the value of $x$, in degrees?

4. The chart below shows the high temperatures for 6 days in May in degrees Fahrenheit.

<table>
<thead>
<tr>
<th>Mon</th>
<th>Tues</th>
<th>Wed</th>
<th>Thurs</th>
<th>Fri</th>
<th>Sat</th>
</tr>
</thead>
<tbody>
<tr>
<td>70°</td>
<td>70°</td>
<td>68°</td>
<td>72°</td>
<td>74°</td>
<td>77°</td>
</tr>
</tbody>
</table>

   What is the median temperature in degrees for the 6-day period?

5. A recent poll shows 40 people in favor of water rationing, 18 people against, and 2 people with no opinion. In lowest terms, what fraction of the people polled are against water rationing?

6. Consider this function.
   \[f(x) = \ |x - 4| + x^2\]
   What is the value of $f(-3)$?
7. At a baseball stadium, a popular shirt is offered with short sleeves or long sleeves. The shirt comes in either blue or black. The table below is only partly completed.

<table>
<thead>
<tr>
<th></th>
<th>Blue</th>
<th>Black</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short Sleeves</td>
<td>800</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long Sleeves</td>
<td>600</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2,200</td>
<td>4,000</td>
<td></td>
</tr>
</tbody>
</table>

Based on the data in the table, how many long-sleeved shirts were sold?

10. When twice a number is decreased by 9, the result is equal to 7. What is the number?

11. A figure below is created by combining two squares and a rectangle. The expressions inside each figure represent that shape’s area. If \( x = 4 \) and \( y = 9 \), what is the perimeter of the entire figure?

12. The triangle and the rectangle shown below have the same area.

If the height of the triangle is 6, what is the measure of the base?

9. When a certain number \( n \) is divided by 5, the remainder is 4. What would the remainder be if you divide \( n + 3 \) by 5?
Part 2: You may use a calculator during this section, although a calculator may not be needed on every item. Select the correct answer from the four choices. You have 50 minutes to complete this section of the test.

1. Beeline Rentals charges $84.92 to rent a car for 1 week or $14.56 per day. If you need a car for only 6 days, how much would you save by renting the car for the entire week instead of paying the daily rate?
   A $0.41
   B $2.44
   C $8.56
   D $64.36

2. Which choice shows $\sqrt{180x^3}$ in simplified form?
   A $90x^2\sqrt{2x}$
   B $20x^2\sqrt{3x}$
   C $9\sqrt{20x^3}$
   D $6x\sqrt{5x}$

3. A large storage tank in the shape of a cylinder is shown below. To the nearest square meter, what is the surface area of the storage tank?

   A 175
   B 377
   C 550
   D 1,099

4. What is the value of $x$ when $6(3 - 8x) = 2(9 + 4x)$?
   A 0
   B 3
   C 6
   D 18

5. A baseball team won 40 of its first 60 games. What is the team’s ratio of wins to losses?
   A 1:2
   B 1:3
   C 2:1
   D 2:3
6. On the coordinate plane below, which of the following could be the coordinates of point A?

```
A (2, -5)
B (-5, -2)
C (-5, 2)
D (2, 5)
```

8. The graph below shows the function $f(x)$ from $x = -5$ to $x = 5$. For what value of $x$ does $f(x)$ attain its maximum value?

```
A -3
B 0
C 3
D 5
```

7. Find the product.

$$2x^0y^{-2} \cdot 3x^{-2}y^3$$

```
A \frac{6y}{x^2}
B 6x^2y
C \frac{6y}{x^{-2}}
D 5x^{-2}y
```

9. A dining room table regularly sells for $440. During a weekend sale, the price is reduced to $330. By what percent did the store decrease the price?

```
A 11%
B 20%
C 25%
D 33 \frac{1}{3} \%
```
10. A block letter T is built from aluminum. Each intersection of line segments forms a right angle. If all the measures are in centimeters, what is the volume of the T in cubic centimeters?

![Diagram of the T block]

A 33,060  
B 6,624  
C 3,264  
D 2,984

11. One number \(x\) is 4 less than twice another number \(y\). The difference of the numbers is 8. Which of these systems could be used to solve for the unknown numbers?

A \[
\begin{align*}
2y - 4 &= x \\
x + y &= 8
\end{align*}
\]

B \[
\begin{align*}
x - 4 &= 2y \\
x - y &= 8
\end{align*}
\]

C \[
\begin{align*}
2y &= x - 4 \\
y - x &= 8
\end{align*}
\]

D \[
\begin{align*}
x &= 2y - 4 \\
x - y &= 8
\end{align*}
\]

12. A manager wants to find out how many hours the salespeople spend on the phone during an 8-hour shift. She surveys 16 workers and gathers the information shown on the histogram below.

![Histogram showing distribution of phone usage]

Based on the data, which is a true statement?

A Over 50% of the workers spend more than 3 hours on the phone.  
B Every worker spends at least 2 hours on the phone.  
C The median time spent on the phone is 3 hours.  
D More than 25% of the workers spend less than 2 hours on the phone.

13. A remote control car travels 7.5 meters per second. A second car travels 8 meters per second. In a race, the first car is given a head start of 25 meters. If both cars cross the finish line at the same time, how many meters long is the track?

A 3,000  
B 1,500  
C 400  
D 200
14. Triangles $PQR$ and $PEF$ are similar. How many units long is segment $PR$?

A 21  
B 28  
C 35  
D 84

15. Simplify.

$(3x^2 + 5x) - (6x^2 - 5x - 2)$

A $9x^2 + 2$  
B $3x^2 - 10x + 2$  
C $-3x^2 + 10x + 2$  
D $-3x^2 - 2$

16. The variables $a$, $b$, $c$, $d$, and $e$ represent points on the number line below. Which expression would have the least value?

A $2d$  
B $e - a$  
C $b + c$  
D $-(a + b)$

17. A rectangle is 28 inches wide and 45 inches long. If you draw a straight segment from $C$ to $E$, what will be the length of the segment in inches?

A 46  
B 53  
C 65  
D 73

18. What is the value of the expression when $x$ equals $-2$?

$\frac{|-x^3 + 6|}{-7} + x$

A 2  
B 0  
C $-2$  
D $-4$

19. What value must be excluded from the domain of the rational expression?

$\frac{x^2 + 14x + 45}{x + 9}$

A 0 and $-9$  
B $-5$ and $-9$  
C $-9$ only  
D No values must be excluded.
20. When an object is launched into the air, its height in feet \((h)\) can be modeled using the function \(h = vt - 16t^2\), where \(v\) is the initial speed and \(t\) is the time in seconds.

A baseball player hits a ball into the air with an upward speed of 96 feet per second. How many seconds is the ball in the air before it hits the ground?

Hint: When \(h\) equals 0, the ball is on the ground.
A 0
B 4
C 6
D 16

21. A circle with center \(O\) is inscribed in square \(ABCD\). If the area of the square is 4 square inches, what is the area of the shaded region of the circle, in square inches?

A \(\frac{\pi}{4}\)
B \(\frac{\pi}{2}\)
C \(2\pi\)
D \(4\pi\)

22. A math teacher gave her students a pop quiz with 20 questions. The box-and-whiskers plot shows the number of items answered correctly.

If 40 students took the quiz, which of the following is a true statement?
A At least 10 students answered less than 8 questions correctly.
B 75% of the class got 10 or more questions right.
C 16 students got a perfect score.
D Three-fourths of the students answered at least 12 questions correctly.

23. What is the complete factorization of the quadratic expression?
\[4x^2 + 8x - 60\]
A \((2x - 5)(2x + 6)\)
B \(4(x + 3)(x - 5)\)
C \(4(x - 6)(x + 10)\)
D \(4(x - 3)(x + 5)\)

24. A line passes through points \((-4, -3)\) and \((1, -2)\). What is the equation of the line in standard form?
A \(5x - 11y = 3\)
B \(5x + 3y = 11\)
C \(3x - 5y = -11\)
D \(x - 5y = 11\)
25. The equation $x + 3y = -7$ is graphed on the coordinate plane below.

Which of the following equations represents a line that is perpendicular to the line on the graph?

A $y = 3x + 1$
B $y = -3x - 7$
C $y = \frac{1}{3}x + \frac{2}{3}$
D $y = -\frac{1}{3}x - 4$

26. The graph of $h(x)$ is shown below. If $h(x) = 2$, what is a possible value of $x$?

A $-2$
B $-1$
C $1$
D $2$

27. A bag contains red, blue, and yellow marbles. There are 20 marbles in all. In an experiment, Lisa draws out 1 marble at random, records the color, and returns the marble to the bag. After 10 trials, she has drawn out 3 blue, 1 red, and 6 yellow.

Which of the following is the most likely conclusion that can be drawn about the contents of the bag?

A There are at least 6 yellow marbles in the bag.
B There are more yellow marbles than blue or red combined.
C There are more yellow than red marbles in the bag.
D There are about the same number of blue and yellow marbles.

28. Given the following figure, what is the value of $x$?

A 16
B 30
C 45
D 60
29. The three vertices of a triangle are drawn on the coordinate plane below. Suppose a line is drawn from point A to point C. What would be the slope of the line?

![Coordinate Plane with Points A, B, and C]

A -8  
B -6  
C -4  
D -2

30. Which of the following represents the solution set for the inequality?

\[ 1 \leq -2x + 5 \]

A  
B  
C  
D

31. Which of the following is the graph of a linear function with a positive slope and a negative y-intercept?

![Graph Options A, B, C, D]
32. On the graph, \( f(x) = y \). What is the range of the function?

\[\begin{array}{|c|c|c|c|c|c|c|}
\hline
x & -5 & -4 & -3 & -2 & -1 & 1 \hline
y & 5 & 4 & 3 & 2 & 1 & 0 \hline
\end{array}\]

A. All real numbers
B. All real numbers greater than \(-3\) and less than \(3\)
C. All real numbers greater than \(0\)
D. All real numbers greater than or equal to \(-4\)

33. A gallon jug contains \( \frac{1}{3} \) of a gallon of apple juice. The jug is then filled with equal amounts of cranberry juice, pear juice, and apple juice. What fraction of the gallon is apple juice?

A. \( \frac{4}{15} \)
B. \( \frac{1}{4} \)
C. \( \frac{7}{15} \)
D. \( \frac{7}{12} \)

34. A rectangular monument is 8 feet by 10 feet. A walkway of uniform width surrounds the monument. The area of the walkway is 4.5 times the area of the monument. What is the width of the walkway, in feet?

\[\text{monument}\]

W

A. 6
B. 9
C. 10
D. 15

35. A rectangular piece of cardboard measures 3 feet by 4 feet. Evan needs to cut smaller pieces of cardboard, each measuring 6 inches by 8 inches. How many smaller pieces can he cut from the large piece?

A. 12
B. 24
C. 36
D. 48
36. Write the quotient in simplified form.
\[
\frac{6a^5}{b^2} \div \frac{2a^2}{b^3}
\]
A \[ \frac{12a^3}{b} \]
B \[ 3a^3b \]
C \[ 12a^7b^5 \]
D \[ \frac{1}{3a^4b} \]

37. If \((4x - 4)(3 - x)\), what are all the possible values of \(x\)?
A \(0\)
B \(3\) only
C \(1\) and \(3\)
D \(0, 1, \) and \(3\)

38. The perimeter of a rectangular plot of land is 270 yards. If the width of the plot is 50 yards, what is the area of the plot of land, in square yards?
A \(4,250\)
B \(8,500\)
C \(10,800\)
D \(13,500\)

39. Micah is graphing the following system on the coordinate plane below. To complete the graph, which region should he shade?
\[
\begin{align*}
\{ y &\leq x - 3 \\
& y \leq -x + 1
\end{align*}
\]

40. A sequence of numbers is defined by a function. The first 6 numbers in the sequence are 11, 17, 23, 29, 35, and 41. Let \(n\) represent a number's position in the sequence. Which of the functions can be used to find the \(n\)th term in the sequence?
A \(f(n) = 11n + 6\)
B \(f(n) = 6n + 5\)
C \(f(n) = n + 11\)
D \(f(n) = n + 6\)
PART 1
1. 18
2. 16
3. 140
4. 71
5. $\frac{3}{10}$ or .3
6. 16

7. 1,600
8. 120
9. 2
10. 8
11. 52
12. 6

PART 2
1. B $2.44
2. D $6x/\sqrt{5x}$
3. B 377
4. A 0
5. C 2:1
6. C (−5, 2)
7. A $\frac{6y}{x^2}$
8. A −3
9. C 25%
10. B 6,624
11. D $\left\{ \begin{array}{l} x = 2y - 4 \\ x - y = 8 \end{array} \right.$
12. D More than 25% of the workers spend less than 2 hours on the phone.
13. C 400
14. A 21
15. C $-3x^2 + 10x + 2$
16. C $b + c$
17. B 53
18. D −4
19. C −9 only
20. C 6
21. B $\frac{n}{2}$
22. B 75% of the class got 10 or more questions right.

23. D $(x - 3)(x + 5)$
24. D $x - 5y = 11$
25. A $y = 3x + 1$
26. B −1
27. C There are more yellow than red marbles in the bag.
28. B 30
29. D $-2$
30. C $x - 5y = 11$
31. B
32. D All real numbers greater than or equal to −4
33. C $\frac{7}{15}$
34. A 6
35. C 36
36. B $3a^3b$
37. C 1 and 3
38. A 4,250
39. D D
40. B $f(n) = 6n + 5$
### SIMULATED TASC TEST: PART 1

<table>
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<tr>
<th>TASC Content Area</th>
<th>Item Number</th>
<th>Corresponding Lessons in Math Sense 2 Series</th>
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<tbody>
<tr>
<td>Numbers and Quantity</td>
<td>5, 7, 8</td>
<td>Focus on Operations</td>
</tr>
<tr>
<td>Algebra</td>
<td>1, 9, 10</td>
<td>Focus on Problem Solving, Units 1, 2, and 3 Focus on Analysis, Units 3, 5, and 6</td>
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<tr>
<td>Functions</td>
<td>6</td>
<td>Focus on Analysis, Unit 4</td>
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<tr>
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<td>Focus on Problem Solving, Units 4 and 5</td>
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<tr>
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<td>Focus on Analysis, Units 1 and 2</td>
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### SIMULATED TASC TEST: PART 2

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<td>Focus on Problem Solving, Units 1, 2, and 3 Focus on Analysis, Units 3, 5, and 6</td>
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<tr>
<td>Geometry</td>
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<td>Focus on Problem Solving, Units 4 and 5</td>
</tr>
<tr>
<td>Statistics and Probability</td>
<td>12, 22, 27</td>
<td>Focus on Analysis, Units 1 and 2</td>
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