iLEAP Practice Test—Grade 7 Math

Test Administrator Instructions

★ This document contains a Practice Test that shows what each part, or session, of an actual grade 7 transitional math assessment is like.

The Practice Test may be used at home or at school for students to become familiar with the iLEAP test they will take in spring 2013. It can help students feel more relaxed when they take the actual test.

★ The iLEAP Assessment Guides provide information on the overall design of the actual test, as well as sample test items and suggested informational resources. The Assessment Guides for each grade can be found on the Louisiana Department of Education’s website.

http://www.doe.state.la.us/topics/assessment_guides.html

The mathematics test has three sessions to be taken separately:

- Session 1 (pages 3 to 15) includes 30 multiple-choice questions—a calculator may not be used.
- Session 2 (pages 17 to 28) includes 30 multiple-choice questions—a calculator may be used.
- Session 3 (pages 30 and 31) includes 2 constructed-response questions—a calculator may be used.

★ A Mathematics Reference Sheet, which students may use for all sessions, is located on page 34.

★ Students respond to multiple-choice items using the Answer Sheets on pages 32 and 33 and constructed-response items using pages 30 and 31 of Session 3.

★ The Answer Keys and Scoring Rubrics, used to score student responses, are located on pages 35 to 38.

When printing the PDF files for the three Math Sessions, be sure to set the Page Scaling drop-down menu on the Print screen to None, No Scaling, or Actual Size depending on the printer you are using. Otherwise measurement items may not be the correct size, which may impact student responses.
The Math test has three sessions, two with multiple-choice questions and one with constructed-response questions. You may not use a calculator for session 1, but you may use a calculator for sessions 2 and 3.
1. Caleb bought a 13.25-ounce box of pasta for $3.05. Caleb estimated the price per ounce of pasta. Which statement correctly compares the estimated price per ounce and the exact price per ounce of pasta?

A. The estimate $3 \div 15$ is larger than the exact answer.
B. The estimate $3 \div 12$ is larger than the exact answer.
C. The estimate $3 \div 12$ is smaller than the exact answer.
D. The estimate $4 \div 12$ is smaller than the exact answer.

2. Use the expression below to answer the question.

$$(8 - 3)^2 \div 5 + 2^3 \times 7$$

Which is a correct first step?

A. $8 - 3$
B. $3^2$
C. $5 + 2$
D. $8^2$
3. Janice has run 5 laps around the track, which is \( \frac{5}{8} \) of her total workout. **What percentage of her workout has Janice completed?**

A. 1.60%
B. 6.25%
C. 16.0%
D. 62.5%

4. The table below shows the number of views Sam’s new music video received each week since he posted it online.

<table>
<thead>
<tr>
<th>Week</th>
<th>Views</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>300</td>
</tr>
<tr>
<td>2</td>
<td>600</td>
</tr>
<tr>
<td>3</td>
<td>1,200</td>
</tr>
<tr>
<td>4</td>
<td>2,400</td>
</tr>
</tbody>
</table>

**What is the relationship between the number of views and the number of weeks since Sam posted the video?**

A. The number of views triples each week.
B. The number of views increases by 300 views each week.
C. The number of views doubles each week after starting at 300 in week 1.
D. The number of views increases by 600 views each week after starting at 300 in week 1.
5. Hunan spent $\frac{3}{8}$ of his time studying science. He spent $\frac{2}{5}$ as much time studying English as science. What fraction of Hunan's study time was spent studying English?

A. $\frac{1}{40}$

B. $\frac{3}{20}$

C. $\frac{31}{40}$

D. $\frac{15}{16}$

6. The perimeter of a square table with an area of $x$ square feet is represented by the algebraic expression below.

$$4 \sqrt{x}$$

What is the perimeter of the table when $x = 49$ square feet?

A. 14 feet

B. 28 feet

C. 98 feet

D. 196 feet
7. The corner drugstore sells travel-size toothpaste tubes with the following weights: 0.9 ounce, 0.85 ounce, 1.0 ounce, and 0.6 ounce. **Which number line represents the weights of the travel-size toothpaste tubes?**

A.  
```
0 0.6 0.9 1.0
0.85
```

B.  
```
0 1.0 0.6 0.9
0.85
```

C.  
```
0 1.0 0.6 0.9
0.85
```

D.  
```
0 0.6 0.9 1.0
0.85
```

8. The schedule for the music showcase includes 3 sets that are 20 minutes each and 1 set that is 40 minutes. There is a 10-minute break between each set. The total length of the music showcase is $3(20 + 10) + 40$ minutes. **What is the total length of the music showcase?**

A. 73 minutes  
B. 110 minutes  
C. 130 minutes  
D. 210 minutes
9. Briana biked 2.82 miles on Monday, 3.75 miles on Wednesday, and 2.13 miles on Friday. Briana estimated the total distance she biked. **Which statement correctly compares an estimate of the total distance with the exact total distance that Briana biked?**

A. The estimate $2 + 3 + 2$ is smaller than the exact answer but is within 1 mile.
B. The estimate $2 + 4 + 2$ is greater than the exact answer but is within 1 mile.
C. The estimate $3 + 4 + 2$ is smaller than the exact answer but is within 1 mile.
D. The estimate $3 + 4 + 2$ is greater than the exact answer but is within 1 mile.

10. Natasha cooked 36 ounces of steak to feed 4 people. **At the same rate, how many ounces of steak would Natasha have to cook to feed 6 people?**

A. 38 ounces
B. 42 ounces
C. 54 ounces
D. 60 ounces

11. The figure below shows a diagram of the reading room in the library.

What is the perimeter of the reading room in the library?

A. 176 feet
B. 181 feet
C. 191 feet
D. 206 feet
12. Shawn’s digital ruler measured the height of his speaker as 5.125 inches. **What is the height of Shawn’s speaker in mixed number form?**

- A. \(5 \frac{125}{10,000}\) inches
- B. \(5 \frac{1}{25}\) inches
- C. \(5 \frac{1}{8}\) inches
- D. \(5 \frac{1}{4}\) inches

13. The diameter of the base of a circular flower pot is 10 inches. **What is the area of the base of the flower pot?**

- A. \(10\pi\) square inches
- B. \(20\pi\) square inches
- C. \(25\pi\) square inches
- D. \(100\pi\) square inches

14. Over the past few months, West Side Motors has offered car loan rates of 3.25%, 3.9%, 3.125%, and 3.75%. **Which inequality correctly represents the relationships between the car loan rates offered by West Side Motors?**

- A. \(3.9\% > 3.25\% > 3.75\% > 3.125\%\)
- B. \(3.9\% < 3.25\% < 3.75\% < 3.125\%\)
- C. \(3.125\% > 3.25\% > 3.75\% > 3.9\%\)
- D. \(3.125\% < 3.25\% < 3.75\% < 3.9\%\)
15. The table below shows the number of dog treats, \( y \), remaining after \( x \) days.

<table>
<thead>
<tr>
<th>Day (( x ))</th>
<th>Dog Treats (( y ))</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>2</td>
<td>16</td>
</tr>
<tr>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>4</td>
<td>8</td>
</tr>
</tbody>
</table>

What is the relationship between the number of dog treats remaining and the day?

A. \( y = -4x + 20 \)
B. \( y = -4x + 24 \)
C. \( y = x - 4 \)
D. \( y = 24x - 4 \)

16. What is the value of the expression \( 5 \times (3 + 6 \div 3) \)?

A. 7
B. 15
C. 17
D. 25

17. Mark bought 0.72 pound of almonds for $4.68. What was the cost of 1 pound of almonds?

A. $3.37
B. $3.96
C. $5.40
D. $6.50
18. Charlotte invested $100 per year into a business for 3 years. The total value of her investment after 3 years is represented by the algebraic expression $100(x^3 + x^2 + x)$, where $x$ is the growth in value each year. **What is the total value of her investment when $x = 2$?**

A. $600
B. $1200
C. $1400
D. $6400

19. The table below shows the number of free throws Casey practiced each day over a 5-day period before a game.

<table>
<thead>
<tr>
<th>Day</th>
<th>Free Throws</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>80</td>
</tr>
<tr>
<td>2</td>
<td>40</td>
</tr>
<tr>
<td>3</td>
<td>20</td>
</tr>
<tr>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

**What is the relationship between the number of free throws Casey practiced and the day?**

A. The number of free throws changes by 5 each day after starting at 80 on day 1.
B. The number of free throws changes by 40 each day after starting at 80 on day 1.
C. The number of free throws changes by a factor of $\frac{1}{2}$ each day after starting at 80 on day 1.
D. The number of free throws changes by a factor of $\frac{1}{16}$ each day after starting at 80 on day 1.
20. Darcy built 4 guitars. The thicknesses in inches of the top of each guitar are \( \frac{5}{32} \), \( \frac{3}{16} \), and \( \frac{7}{64} \). Which inequality correctly represents the relationships between the thicknesses of the tops of Darcy’s guitars?

A. \( \frac{3}{16} \) inch \( < \) \( \frac{1}{8} \) inch \( < \) \( \frac{5}{32} \) inch \( < \) \( \frac{7}{64} \) inch
B. \( \frac{1}{8} \) inch \( < \) \( \frac{3}{16} \) inch \( < \) \( \frac{5}{32} \) inch \( < \) \( \frac{7}{64} \) inch
C. \( \frac{7}{64} \) inch \( < \) \( \frac{5}{32} \) inch \( < \) \( \frac{3}{16} \) inch \( < \) \( \frac{1}{8} \) inch
D. \( \frac{7}{64} \) inch \( < \) \( \frac{1}{8} \) inch \( < \) \( \frac{5}{32} \) inch \( < \) \( \frac{3}{16} \) inch

21. Sonja worked 4 days in a row doing yard work and earned $4 each day. She did yard work the next day with her brother, and they evenly shared the $8 they earned. On each of those 5 days, Sonja spent $3. The expression below shows how many dollars Sonja has left.

\[ 4^2 + (8 \div 2) - 5 \times 3 \]

How many dollars does Sonja have left from the amount she earned doing yard work?

A. $5
B. $9
C. $21
D. $45

22. Tamara is trying to determine which greeting card maximizes the area of her photo. The photo on the blue greeting card is \( 2 \frac{1}{4} \) inches by \( 3 \frac{3}{4} \) inches. Tamara estimated the area of the photo. Which statement correctly compares the estimated area and the exact area of the photo?

A. The estimate \( 2 \times 4 \) is the same value as the exact answer.
B. The estimate \( 2 \times 4 \) is larger than the exact answer and is within 1 inch.
C. The estimate \( 2 \times 3 \) is smaller than the exact answer and is within 1 inch.
D. The estimate \( 2 \times 4 \) is smaller than the exact answer and is within 1 inch.
23. Chris arranged his action figures in $x$ columns and $x + 2$ rows. The total number of figures he arranged is represented by the algebraic expression $x^2 + 2x$. What is the total number of action figures when $x = 4$ columns?

A. 10
B. 16
C. 24
D. 40

24. Clayton read 40% of his new book over the weekend. What fraction of the book did Clayton read?

A. $\frac{1}{40}$
B. $\frac{4}{100}$
C. $\frac{2}{5}$
D. $\frac{4}{5}$
25. The table below represents the number of participants, \( y \), on the Valley Middle School debate team after \( x \) years.

<table>
<thead>
<tr>
<th>Year ((x))</th>
<th>Participants ((y))</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td>3</td>
<td>14</td>
</tr>
<tr>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>5</td>
<td>18</td>
</tr>
</tbody>
</table>

What is the relationship between the number of participants on the debate team and the year?

A. \( y = x + 2 \)
B. \( y = 2x + 8 \)
C. \( y = 2x + 10 \)
D. \( y = 8x + 2 \)

26. Jack bought a shirt with a regular price of $30 and a jacket with a regular price of $45 during a sale where everything was \( \frac{1}{3} \) off. The total cost of the shirt and jacket was \( 30 + 45 - (30 + 45) \div 3 \). **What was the total cost of the shirt and jacket?**

A. $20
B. $30
C. $50
D. $60
27. A family left part of a pie on the counter. Margaret then ate some of the pie. She ate \( \frac{1}{4} \) of the whole pie. This was \( \frac{2}{3} \) of what was remaining. How much of the whole pie was on the counter before Margaret ate some?

A. \( \frac{1}{6} \)

B. \( \frac{3}{8} \)

C. \( \frac{5}{12} \)

D. \( \frac{11}{12} \)

28. Andrea created a 2-minute video in 30 minutes. At the same rate, how long will it take Andrea to create a 5-minute video?

A. 33 minutes

B. 35 minutes

C. 75 minutes

D. 150 minutes
29. The figure below shows a diagram of Laura’s front porch.

![Diagram of Laura's Front Porch]

What is the area of Laura’s front porch?

A. 280 square feet  
B. 380 square feet  
C. 480 square feet  
D. 540 square feet

30. During the night shift at the warehouse, 1 employee earns $12 per hour, 2 employees earn $11 per hour, 3 employees earn $10 per hour, and 3 employees earn $9 per hour. The total amount they earn per hour is $12 + 2($11) + 3($10 + $9) dollars. What is the total amount the employees earn per hour?

A. $73  
B. $91  
C. $193  
D. $211
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31. Of the first 15 sandwiches sold at a restaurant one day, 9 were club sandwiches. **At the same rate, how many sandwiches would have to be sold for 90 of the total number of sandwiches to be club sandwiches?**

A. 54  
B. 114  
C. 135  
D. 150

32. Mika is filling her fish tank. There are 8 gallons of water in the tank when she starts filling it. She is adding 4 gallons of water per minute. The tank can hold 20 gallons. **Which inequality shows how many minutes (m) Mika can fill the tank without it overflowing?**

A. \( m \leq 3 \)  
B. \( m \geq 3 \)  
C. \( m \leq 7 \)  
D. \( m \geq 7 \)
33. Maureen purchased a watch for a sale price of $24. The price was 20% off its original price. Which expression computes the original price of the watch?

A. $24 \times 0.20$
B. $24 \times (1 – 0.20)$
C. $24 \div (1 – 0.20)$
D. $24 \div 0.20$

34. Farriah found out that 54 students in the 7th grade have older siblings. There are 81 students in 7th grade. What is the ratio of students with older siblings to students in the 7th grade?

A. 2:1
B. 2:3
C. 1:27
D. 7:27

35. Matty’s piano book includes 15 songs in the key of C, 10 in the key of G, and 5 in the key of F. The songs from all three keys appear in random order. Over the past month, Matty has randomly opened his piano book to a song in the key of C 80 times, the key of G 30 times, and the key of F 10 times. What are the theoretical and experimental probabilities that the next song Matty randomly picks will be in the key of G?

A. Theoretical probability $= \frac{1}{4}$ and experimental probability $= \frac{1}{3}$
B. Theoretical probability $= \frac{1}{2}$ and experimental probability $= \frac{1}{3}$
C. Theoretical probability $= \frac{1}{3}$ and experimental probability $= \frac{1}{2}$
D. Theoretical probability $= \frac{1}{3}$ and experimental probability $= \frac{1}{4}$
36. The community theater sold 8 tickets on day 1 of ticket sales. Ticket sales then changed by a factor of 2 each day for the next 3 days. Which table shows the number of tickets sold each day?

A. Community Theater
   Tickets Sold
   Day | Tickets Sold
   1   | 8
   2   | 12
   3   | 18
   4   | 27

B. Community Theater
   Tickets Sold
   Day | Tickets Sold
   1   | 8
   2   | 10
   3   | 12
   4   | 14

C. Community Theater
   Tickets Sold
   Day | Tickets Sold
   1   | 8
   2   | 16
   3   | 24
   4   | 32

D. Community Theater
   Tickets Sold
   Day | Tickets Sold
   1   | 8
   2   | 16
   3   | 32
   4   | 64

37. Working together, Ann and Jane painted a total of 480 square feet in 3 hours. They each painted the same number of square feet. What is the average rate that Ann and Jane each painted in square feet per hour?

A. 80 square feet per hour
B. 160 square feet per hour
C. 240 square feet per hour
D. 720 square feet per hour
38. Jesse is making a design to stitch onto a T-shirt. He wants the design to be an isosceles triangle inside a circle. He also wants the radius of the circle to be an altitude of the triangle. Which design should Jesse use?

![Design Options](image)

A.  
B.  
C.  
D.  

39. A total of 21 students in a math class had a calculator with them. This is 8 more than half of the total number of students in the math class. The equation below can be used to find, \( t \), the total number of students in the math class.

\[
\frac{1}{2} t + 8 = 21
\]

How many students are in the math class?

A. 14.5  
B. 26  
C. 42  
D. 58  

40. Cynthia had 6 assists in 4 basketball games. At the same rate, how many assists will Cynthia have in 18 games?

A. 12 assists  
B. 20 assists  
C. 24 assists  
D. 27 assists
41. This week, Matthew practiced his trumpet for 90 minutes. Next week, Matthew plans to increase his practice time by $\frac{1}{3}$. Which expression describes the number of minutes Matthew plans to practice next week?

A. $\frac{1}{3} \times 90$

B. $\frac{1}{3} + 90$

C. $\frac{1}{3} \times 90 + 90$

D. $\frac{1}{3} + 90 + 90$

42. The table below represents the number of paintings, $y$, that Jordan completed in $x$ years.

<table>
<thead>
<tr>
<th>Year ($x$)</th>
<th>Paintings ($y$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>4</td>
<td>13</td>
</tr>
</tbody>
</table>

Which equation describes the relationship between the number of paintings and the year?

A. $y = x + 3$

B. $y = 3x + 1$

C. $y = 3x + 4$

D. $y = 4x + 3$
43. A tour group can have, at most, 40 people in it. On the next tour, there are 22 students and the rest are adults. **Which inequality shows how many adults, \( a \), there can be on the tour?**
   
   A. \( a \leq 40 - 22 \)  
   B. \( a < 40 - 22 \)  
   C. \( a \geq 40 - 22 \)  
   D. \( a > 40 - 22 \)  

44. On Saturday, members of a gardening club sold only shrubs and flowers. Of the plants that the members of the gardening club sold on Saturday, \( \frac{2}{5} \) were shrubs. **What was the ratio of shrubs to flowers?**
   
   A. 2:5  
   B. 2:3  
   C. 3:2  
   D. 5:2  

45. The algebraic expression \( 6x^2 + 9x + 3 \) represents the area of a rectangle with sides \( 2x + 1 \) and \( 3x + 3 \). **What is the area of the rectangle when \( x = 3 \) feet?**
   
   A. 51 square feet  
   B. 60 square feet  
   C. 66 square feet  
   D. 84 square feet
46. Galina traced the shape below on a coordinate grid.

What is the ordered pair for the vertex located in quadrant II?

A. (–2, 3)  
B. (2, –3)  
C. (–3, –3)  
D. (3, 3)

47. A rectangular picture frame has a perimeter of 76 inches. The equation below shows the relationship between the height, $h$, and the width, $w$, of the picture frame.

$$2h + 2w = 76$$

The width of the picture frame is 18 inches. What is the height, $h$, of the picture frame?

A. 20 inches  
B. 38 inches  
C. 40 inches  
D. 58 inches
48. It takes Nancy 20 hours to mow her lawn 15 times. At the same rate, how many hours would it take Nancy to mow her lawn 12 times?

A. 9 hours  
B. 16 hours  
C. 17 hours  
D. 25 hours

49. Tyler cut a 40$\frac{1}{8}$-inch board into 3 pieces of equal length. He then cut $3\frac{3}{4}$ inches off of each piece to make smaller boards. What is the length of each of the smaller boards?

A. $9\frac{5}{8}$ inches  
B. $10\frac{3}{8}$ inches  
C. $12\frac{1}{8}$ inches  
D. $33\frac{3}{8}$ inches

50. Barry was playing games at an arcade. He won 30 tickets for scoring 750 points on one game. How many points would Barry need to score on the same game to win 100 tickets?

A. 820  
B. 1,750  
C. 2,500  
D. 3,250
51. Sarah charges each student a rate of $20 per hour for a cooking class. **How much money will Sarah earn for 4 students who take a 2-hour cooking class?**

A. $40  
B. $80  
C. $120  
D. $160

52. Tanisha hit 40 golf shots and measured the distance of each shot. Her results are shown below.

What is the experimental probability that Tanisha hits a shot that is in the 180–189 yard range?

A. \( \frac{11}{40} \)  
B. \( \frac{2}{5} \)  
C. \( \frac{5}{8} \)  
D. \( \frac{29}{40} \)
53. Chico is saving for new shoes that cost $87. He already has $9 saved, and he will save the same amount each week. Chico wants to buy the shoes in 6 weeks. The inequality shown below is used to determine \( x \), the solution set for all of the values that Chico can save each week.

\[
9 + 6x \geq 87
\]

What is the least Chico can save each week and still buy the new shoes?

A. $9  
B. $13  
C. $15  
D. $16

54. The total area of the floors of 4 square closets in Khia’s house is represented by the algebraic expression \( 4x^2 \), where \( x \) is the side length of each closet’s floor. What is the total area of the floors for all 4 closets if \( x = 3 \) feet?

A. 24 square feet  
B. 36 square feet  
C. 144 square feet  
D. 324 square feet

55. Every 6 days John eats 20 ounces of cereal. At the same rate, how many ounces of cereal will John eat in 15 days?

A. 28 ounces  
B. 29 ounces  
C. 35 ounces  
D. 50 ounces
56. The circumference of the circular table on Colton's porch is $72\pi$ inches. What is the radius of the table?

A. 18 inches  
B. 36 inches  
C. 72 inches  
D. 144 inches

57. Pablo recorded the colors of cars driving by his house. The table below shows the colors of the last 250 cars to drive by Pablo's house.

<table>
<thead>
<tr>
<th>Color</th>
<th>Number of Cars</th>
</tr>
</thead>
<tbody>
<tr>
<td>blue</td>
<td>70</td>
</tr>
<tr>
<td>green</td>
<td>30</td>
</tr>
<tr>
<td>red</td>
<td>50</td>
</tr>
<tr>
<td>white</td>
<td>80</td>
</tr>
<tr>
<td>yellow</td>
<td>20</td>
</tr>
</tbody>
</table>

Using these data, what is the probability that the next car to drive by Pablo's house will be red or blue?

A. $\frac{5}{25}$  
B. $\frac{7}{25}$  
C. $\frac{12}{25}$  
D. $\frac{13}{25}$
58. The choir director set up chairs for the concert with an equal number of rows and columns. The number of chairs in each row and column is represented by the algebraic expression $\sqrt{y}$, where $y$ is the total number of chairs. **What is the number of chairs in each row and column if $y = 81$ chairs?**

   A. 3 chairs  
   B. 9 chairs  
   C. 40.5 chairs  
   D. 162 chairs

59. Ross had $x$ dollars to spend on a baseball glove and a baseball. He spent one-half of the money on the baseball glove and $4 on the baseball. He has $38 left. The equation shown below can be used to determine $x$.

   \[ \frac{1}{2}x - 4 = 38 \]

   **How many dollars did Ross have to start with?**

   A. $17  
   B. $21  
   C. $68  
   D. $84

60. In Tracy’s class, the ratio of boys to girls is 3:7. The class sizes at Tracy’s school range from 22 to 34 students per class. **What is the total number of students in Tracy’s class?**

   A. 21 students  
   B. 24 students  
   C. 28 students  
   D. 30 students
The Math test has three sessions, two with multiple-choice questions and one with constructed-response questions. You may **not** use a calculator for session 1, but you may use a calculator for sessions 2 and 3.
Write your answers for questions 61 and 62 in the spaces provided below. The questions have more than one part. Show all the work you do to find your answers. Even if you cannot answer all parts, answer as many as you can. You may still get points for answering part of a question. Be sure to write clearly. You may review your work in this session but do not work on any other session.

You MAY use a calculator for this session.

61. In a school with only sixth and seventh graders, \( \frac{2}{5} \) of the 200 students are seventh graders.

A. How many students in the school are seventh graders?

B. Describe two different ways to determine how many students in the school are sixth graders.

C. Of the seventh graders, 30% of them are in the band. If the band has the same number of sixth graders as seventh graders, what percentage of the sixth graders are in the band? Explain how you found your answer.
Circle C is shown below.

A. Draw right triangle DCA where CA is a radius of the circle. Label point A.

Explain how you know that right triangle DCA is an isosceles triangle.

B. Draw equilateral triangle DCB on circle C. Label point B.

Explain how you know that equilateral triangle DCB is an acute triangle.
Multiple-Choice Answer Sheet

Name: ____________________________________________

Session 1

1. __________  16. __________
2. __________  17. __________
3. __________  18. __________
4. __________  19. __________
5. __________  20. __________
6. __________  21. __________
7. __________  22. __________
8. __________  23. __________
9. __________  24. __________
10. __________ 25. __________
11. __________ 26. __________
12. __________ 27. __________
13. __________ 28. __________
14. __________ 29. __________
15. __________ 30. __________
Multiple-Choice Answer Sheet

Name: __________________________________________

Session 2

31. ____________ 46. ____________ 51. ____________ 56. ____________
32. ____________ 47. ____________ 52. ____________ 57. ____________
33. ____________ 48. ____________ 53. ____________ 58. ____________
34. ____________ 49. ____________ 54. ____________ 59. ____________
35. ____________ 50. ____________ 55. ____________ 60. ____________
36. ____________ 51. ____________ 61. ____________
Use the information below to answer questions on the Math test.

### Circle

- $\pi \approx 3.14$
- Area = $\pi r^2$
- Circumference = $2\pi r$

### Rectangle

- $w \quad Area = lw$
- Perimeter = $2(l + w)$

### Trapezoid

- $b_1 \quad Area = \frac{1}{2} h (b_1 + b_2)$

### Triangle

- $b \quad Area = \frac{1}{2} bh$

### Parallelogram

- $b \quad Area = bh$

### Distance Formula:

distance = rate • time
|   | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24  | 25  | 26  | 27  | 28  | 29  | 30  |
|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
Multiple-Choice Answer Key

Name: ________________________________________________

Session 2

31.  D    46.  A
32.  A    47.  A
33.  C    48.  B
34.  B    49.  A
35.  D    50.  C
36.  D    51.  D
37.  A    52.  A
38.  A    53.  B
39.  B    54.  B
40.  D    55.  D
41.  C    56.  B
42.  B    57.  C
43.  A    58.  B
44.  B    59.  D
45.  D    60.  D
Constructed-Response Scoring Rubrics

Session 3

61. **Scoring Rubric**

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>The student earns 5 points.</td>
</tr>
<tr>
<td>3</td>
<td>The student earns 3 or 4 points.</td>
</tr>
<tr>
<td>2</td>
<td>The student earns 2 points.</td>
</tr>
<tr>
<td>1</td>
<td>The student earns 1 point.</td>
</tr>
<tr>
<td>0</td>
<td>The student’s response is incorrect, irrelevant to the skill or concept being measured, or blank.</td>
</tr>
</tbody>
</table>

**Sample Answer:**

Part A. 80

Part B. Subtract 80 from 200 or multiply 200 by $\frac{3}{5}$.

Part C. 20%. First, I know there are 80 seventh graders and 30% of them are in the band. 30% of 80 is 24, so there are also 24 sixth graders. Since there are 120 sixth graders total, I know that $\frac{24}{120} = \frac{1}{5} = 20\%$ of the sixth graders are in the band.

**Points Assigned:**

Part A. 1 point
1 point for correctly determining how many seventh graders there are

Part B. 2 points
1 point for each of 2 correctly described valid mathematical ways to determine how many sixth graders there are

Part C. 2 points
1 point for correctly determining what percentage of sixth graders are in the band
AND
1 point for providing a valid mathematical explanation for how the student determined what percentage of sixth graders are in the band
Scoring Rubric

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
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</tr>
<tr>
<td>3</td>
<td>The student earns 3 points.</td>
</tr>
<tr>
<td>2</td>
<td>The student earns 2 points.</td>
</tr>
<tr>
<td>1</td>
<td>The student earns 1 point.</td>
</tr>
<tr>
<td>0</td>
<td>The student’s response is incorrect, irrelevant to the skill or concept being measured, or blank.</td>
</tr>
</tbody>
</table>

Sample Answer:

Part A.

![Diagram](image)

I know that right triangle DCA is an isosceles triangle because sides CD and CA are both the same length since they are both radii of circle C. Since the triangle has two sides that are the same length, then it is an isosceles triangle.

Part B.

![Diagram](image)

I know that equilateral triangle DCB is acute because all of the angles in the triangle measure less than 90°.

Points Assigned:

Part A. 2 points
1 point for correctly drawing a right triangle with one leg as radius CD and the other leg as radius CA and the hypotenuse as chord DA
AND
1 point for correctly explaining why it is an isosceles triangle

Part B. 2 points
1 point for correctly drawing equilateral triangle DCB
AND
1 point for correctly explaining why it is an acute triangle