End-of-Year Review

Test Prep

Multiple Choice

Shade the circle next to the correct answer.

1. In 130.426, the digit 2 is in the ________ place. (Lesson 8.1)
   A  tens  B  tenths  C  hundredths  D  thousandths

2. Use front-end estimation with adjustment to estimate
   $6,189 - 3,674$. (Lesson 1.4)
   A  1,000   B  2,000  C  3,000  D  4,000

3. Simplify $\frac{48}{8} + 13 \times 3$. (Lesson 2.7)
   A  45  B  54  C  57  D  75

4. Express $10\frac{1}{4} - 4\frac{1}{2}$ as a decimal. (Lesson 3.3)
   A  6.25  B  5.75  C  5.43  D  5.34

5. Express 9.062 as a mixed number in simplest form. (Lesson 8.3)
   A  $9\frac{62}{100}$  B  $9\frac{31}{50}$  C  $9\frac{62}{1000}$  D  $9\frac{31}{500}$

6. What is the product of 96 and 13? (Lesson 2.4)
   A  900  B  960  C  1,170  D  1,248
7. Divide 84 by 400. (Lesson 9.4)
   A  0.21  B  0.84
   C  2.1  D  8.4

8. Simplify $16p + 5 - 3p - 2$. (Lesson 5.3)
   A  $19p + 7$  B  $19p - 3$
   C  $13p + 3$  D  $13p - 3$

9. For what value of $y$ will the inequality $4y - 8 > 10$ be true? (Lesson 5.4)
   A  2  B  3
   C  4  D  5

10. What percent of the figure is shaded? (Lesson 10.1)
    
    A  25%  B  35%
    C  40%  D  50%

11. The price of a cell phone is $500. Kathleen pays 8% sales tax on the price of the cell phone. How much sales tax does she pay? (Lesson 10.4)
    A  $400  B  $50
    C  $40  D  $8

12. $\overrightarrow{AB}$ and $\overrightarrow{CD}$ are lines. Find the measure of $\angle a$. (Lesson 12.1)
    A  180°  B  105°
    C  75°  D  57°
13. The sides of triangle ABC are in whole inches. AB = 5 inches and BC = 11 inches. Which of these is a possible length for AC? (Lesson 13.4)
   A 3 inches  B 6 inches
   C 12 inches  D 16 inches

14. In the trapezoid PQRS, PS \parallel QR. Find the measure of SPR. (Lesson 13.5)
   A 98°  B 72°
   C 52°  D 26°

15. Which of these nets can form a triangular pyramid? (Lesson 14.3)
   A  
   B  
   C  
   D  

16. How many 1-centimeter cubes can be put into the box? (Lesson 14.6)
   A 38  B 1,200
   C 1,260  D 1,620
17. What is $0.625 \times 400$? (Lesson 2.2)
   A  1000  B  250
   C  100   D  25

18. Find $3.8 \times 10^3$. (Lesson 2.3)
   A  380   B  3,800
   C  38,000 D  380,000

19. Simplify $30 - \{18 - [12 \div (20 - 14)]\}$. (Lesson 2.7)
   A  14    B  10
   C  56    D  6

20. Which measure is equivalent to 5 kilograms 35 grams? (Lesson 9.6)
   A  8.5 kilograms
   B  5.35 kilograms
   C  5.035 kilograms
   D  5.00035 kilograms

21. Which of the following is equal to 3,160? (Lesson 9.3)
   A  $3.16 \times 10^3$
   B  $0.316 \times 10^3$
   C  $31.6 \times 10^3$
   D  $316 \times 10^2$

22. What is $12 \div \frac{1}{4}$? (Lesson 4.6)
   A  3
   B  $12 \frac{1}{4}$
   C  $11 \frac{3}{4}$
   D  48
Short Answer
Read the questions carefully. Write your answers in the spaces provided. Show your work.

23. Find the area of the rectangle below. (Lesson 6.1)

\[ \text{Area} = \text{length} \times \text{width} \]
\[ = \frac{7}{9} \text{ ft} \times 3\frac{3}{5} \text{ ft} \]

24. In the figure below, how many more circles must be shaded so that the fraction of shaded circles to the total number of circles is \(\frac{2}{3}\)? (Lesson 4.4)
Use the data below for exercises 25 and 26.

Cassia has collected leaves from different plants. She wants to investigate the lengths of the leaves from each plant. She recorded the lengths in the table below.

<table>
<thead>
<tr>
<th>Length (ft)</th>
<th>1/6</th>
<th>1/4</th>
<th>1/2</th>
<th>3/4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Leaves</td>
<td>2</td>
<td>5</td>
<td>7</td>
<td>7</td>
</tr>
</tbody>
</table>

25. Make a line plot to show the data in the table. (Lesson 11.1)

<table>
<thead>
<tr>
<th>Length of Leaves (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/6</td>
</tr>
<tr>
<td>1/4</td>
</tr>
<tr>
<td>1/2</td>
</tr>
<tr>
<td>3/4</td>
</tr>
</tbody>
</table>

26. Use the data to answer these questions. (Lesson 11.1)

a. What is the difference in length between the longest leaf and the shortest leaf?

b. How many more of the long leaves are there than short leaves?
27. A rectangular tank has a height of 18 centimeters. The area of its base is 225 square centimeters. Find the volume of the tank. (Lesson 14.6)

28. Two pieces of foam are placed in a box to protect the sides of a vase, as shown in the diagram below. Find the volume of the two pieces of foam. (Lesson 14.7)
29. Abe, Belle, and Cathy have a total of $179.50. Abe has $9 more than Belle. Cathy has three times as much as Abe. How much money does Belle have? (Lesson 9.6)

30. What is the volume of the solid below, made up of 1-inch cubes? Some of the cubes may be hidden. (Lesson 14.1)
31. Find the surface area of the triangular prism. (*Lesson 14.4*)

![Triangular Prism Diagram]

32. Use the data in the graph below to answer the questions. The graph \(y = 5x\) shows the cost of different lengths of lumber. (*Lesson 11.3*)

**Cost of Lengths of Lumber**

<table>
<thead>
<tr>
<th>Length of Lumber (ft)</th>
<th>Cost of Lumber ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>4</td>
<td>20</td>
</tr>
<tr>
<td>5</td>
<td>25</td>
</tr>
<tr>
<td>6</td>
<td>30</td>
</tr>
<tr>
<td>7</td>
<td>35</td>
</tr>
</tbody>
</table>

**a.** What is the cost of a piece of lumber 7 feet long?

**b.** What would be the length of a piece of lumber costing $50?
33. The figure below is made up of five identical triangles. The perimeter of the square $ABCD$ is 248 inches. Find the area of the whole figure. (Lesson 6.3)
34. The ratio of the volume of water in bucket A to the volume of water in bucket B is $3:5$. The total volume of water in the two buckets is 56 liters. What is the volume of water in bucket B? *(Lesson 7.3)*

35. Write 12 ones and 3 tenths 2 hundredths 5 thousandths in expanded form. *(Lesson 8.1)*

36. What is the value of $\Delta$ in the equation? *(Lesson 9.4)*

$$9.42 = 9,420 \div \Delta$$

37. Order the decimals from least to greatest. *(Lesson 8.2)*

11.05, 11.00, 11.10, 11.009

38. $\frac{3}{8}$ of the regular price of a digital watch is $21. The price of the digital watch after discount is $21. Find the dollar amount of the discount. *(Lesson 10.4)*
Use the data in the bar graph to answer questions 39 and 40.

Favorite Sports of Students

39. For which sport is the difference between the number of boys and girls the greatest? (Lesson 11.2)

40. How many more girls than boys prefer tennis? (Lesson 11.2)
41. Mrs. Richards buys 8 quarts of milk in 4 days. How many gallons of milk does she buy? (Lesson 11.3)

42. What is the equation of the graph? (Lesson 11.3)

43. Mrs. Mani has 1 orange, 1 apple, 1 peach, and 1 apricot. She has 3 different flavored yogurt bars. She packs one fruit and one yogurt bar into a lunch box. Find the number of combinations she can pack in one box. (Lesson 11.5)
44. A box contains 6 red pens, 4 blue pens, 8 green pens, and some black pens. Leslie picks a pen and returns it to the box each time. The outcomes are recorded in the table.

<table>
<thead>
<tr>
<th>Number of Times a Red Pen is Picked</th>
<th>Number of Times a Blue Pen is Picked</th>
<th>Number of Times a Green Pen is Picked</th>
<th>Number of Times a Black Pen is Picked</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>5</td>
<td>14</td>
<td>3</td>
</tr>
</tbody>
</table>

a. What is the experimental probability of drawing a green pen? (Lesson 11.6)

b. If the theoretical probability of drawing a black pen is \( \frac{1}{10} \), how many black pens are in the box? (Lesson 11.6)

45. \( \overleftrightarrow{AB}, \overleftrightarrow{CD} \) and \( \overleftrightarrow{EF} \) are lines. Find the measures of \( \angle x \) and \( \angle y \). (Lessons 12.1 and 12.3)

\[ m\angle x = \] 
\[ m\angle y = \]
46. In triangle $DEF$, $DF = EF$. Find the measures of $\angle a$ and $\angle b$. 
*(Lessons 13.2 and 13.3)*

$$m\angle a = \quad \quad m\angle b = \quad \quad$$

47. $ABCD$ is a parallelogram and $ADE$ is an equilateral triangle. Identify all the angles that have the same measure as $\angle f$. *(Lessons 13.3 and 13.5)*

48. Brian has $50. He buys 10 copies of a book and has $x$ dollars left. What is the cost of each book? *(Lesson 5.5)*

49. How many unit cubes are used to build the solid? *(Lesson 14.1)*
50. \(ABCD\) is a parallelogram. Find the measure of \(\angle DAC\). (Lesson 13.5)

\[
\begin{array}{c}
A \quad 72^\circ \\
D \quad 35^\circ \\
C \quad B
\end{array}
\]

---

51. The net of a square prism is as given. Use the net to find the surface area of the prism. (Lesson 14.4)

\[
\begin{array}{c}
7 \text{ cm} \\
9 \text{ cm} \\
7 \text{ cm}
\end{array}
\]

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52. Express \(3\frac{1}{5} + 2\frac{1}{20}\) as a decimal. (Lesson 3.5)

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53. \(\overrightarrow{JL}\) is a line. Find the measure of \(\angle MKN\). (Lesson 12.1)

\[
\begin{array}{c}
79^\circ \\
67^\circ \\
K
\end{array}
\]
Extended Response
Solve. Show your work.

54. There are 450 seats in a theater. 48% of the seats are occupied. How many seats are not occupied?

55. The area of a plot of land is 2,496 square meters. A small part of the land is fenced. The ratio of the total area of the plot of land to the area that is not fenced is 48 : 31. What is the area of the land that is not fenced?
56. Harry buys a sofa set that costs $2,000. He pays for it with 12 monthly installments. He also pays 5% interest. What is the total amount he has to pay?

57. Mr. Jacobs buys 20 kilograms of rice at $0.84 per kilogram. He buys 700 grams of shrimp at $1.02 per 100 grams. How much does he spend in total?
58. A fish tank measures 40 centimeters by 25 centimeters by 24 centimeters. It is filled with water from a tap. The fish tank is \( \frac{5}{8} \) full in 6 minutes. Find the volume of water that flows from the tap each minute.

59. Mrs. Jackson has $90. She spends \( \frac{1}{4} \) of her money on food, \( \frac{1}{2} \) of the remainder on clothes and saves the rest. How much does she save?
60. Team A has 42 members. Team B has 18 more members than team A. What percent of the members from team B must be transferred to team A so that team A has as many members as team B?

61. An equal amount of water is poured into two empty tanks, P and Q. Tank P is then \( \frac{1}{2} \)-filled. What fraction of tank Q is filled with water?
62. There is some water in a tank. Water is then poured into the tank until the volume of water is 8 times as much as the initial volume of water in the tank. When another 16.75 liters of water is added, the total volume of water in the tank becomes 20.35 liters. How much water is in the tank at first? Give your answer in liters.

63. Flower pots are placed along a driveway at regular intervals. The distance between two pots is 12 feet.

a. How long is the driveway if a total of 25 pots, including pots at both ends, are to be placed along it?

b. If the driveway is 1,080 feet, how many more flower pots are needed?
64. A rectangular tank is half-filled with water. Water is poured into the 10-centimeter cubical tank on the right. How much water is left in the rectangular tank after the cubical tank is filled?
Complete the tables and graphs. Then answer the questions.

65. Roy can type 60 words per minute. Annette can type 70 words per minute. Complete the tables below.

**Number of Words Typed by Roy**

<table>
<thead>
<tr>
<th>Time (min)</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Words</td>
<td>60</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Number of Words Typed by Annette**

<table>
<thead>
<tr>
<th>Time (min)</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Words</td>
<td>70</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

66. Plot the points on a coordinate grid.

![Coordinate Grid](image-url)
67. How many words do each of them type in 4 minutes?

68. How long does each person take to type 840 words?

69. Estimate the time taken by each person to type 1260 words.

70. Annette typed a document for 15 minutes and then had to leave. She asked Roy to continue typing from where she had stopped. Roy took 24 minutes to complete typing the document. How many words were in the document?