Cumulative Review

for Chapter 13 and 14

Concepts and Skills

Find the unknown angle measures. Then classify triangle $ABC$ as an acute, obtuse, or right triangle. (Lessons 13.1 to 13.3)

1. $\triangle ABC$
   
   $m\angle a = \underline{\phantom{0}}$
   
   _______ triangle

2. $\triangle ABC$
   
   $m\angle b = \underline{\phantom{0}}$
   
   _______ triangle

3. $\triangle ABC$
   
   $m\angle c = \underline{\phantom{0}}$
   
   _______ triangle

4. $\triangle ABC$
   
   $m\angle u = \underline{\phantom{0}}$
   
   $m\angle t = \underline{\phantom{0}}$
   
   _______ triangle
Find the unknown angle measures. The figures are not drawn to scale.
(Lesson 13.3)

5. \[ \angle a = \quad \]

6. \[ \angle b = \quad \]

7. \[ AB = BC = AD \]

\[ \angle w = \quad \]

\[ \angle x = \quad \]

9. \[ \angle q = \quad \]

10. \[ ZY = YX = XZ \]

\[ \angle p = \quad \]
Measure the sides of the triangles in inches. Then fill in the blanks.
(Lessons 13.1 and 13.4)

11. $AB$ is _______ inches.

12. $BC$ is _______ inches.

13. $AC$ is _______ inches.

14. $AB + BC >$ _______

15. $AB + AC >$ _______

16. $BC + AC >$ _______

17. What kind of triangle is $ABC$? _______________________

Find the unknown angle measures in each parallelogram. (Lesson 13.5)

18. $m\angle c =$ _______

19. $m\angle f =$ _______

$m\angle d =$ _______

$m\angle e =$ _______
Find the unknown angle measures in each rhombus. (Lesson 13.5)

20. 

\[
\begin{align*}
\angle b &= \_\_\_\_\_\_\_ \\
\angle c &= \_\_\_\_\_\_\_ 
\end{align*}
\]

21. 

\[
\begin{align*}
\angle d &= \_\_\_\_\_\_\_ \\
\angle e &= \_\_\_\_\_\_\_ 
\end{align*}
\]

Find the unknown angle measures in each trapezoid. (Lesson 13.5)

22. In \(EFGH\), \(EF \parallel HG\).

\[
\begin{align*}
\angle b &= \_\_\_\_\_\_\_ \\
\angle c &= \_\_\_\_\_\_\_ 
\end{align*}
\]

23. In \(PQRS\), \(PS \parallel QR\).

\[
\begin{align*}
\angle d &= \_\_\_\_\_\_\_ 
\end{align*}
\]

Find how many unit cubes are used to build each solid. (Lesson 14.1)

24. 

\_\_\_\_\_\_\_ unit cubes

25. 

\_\_\_\_\_\_\_ unit cubes
Draw a cube with edges 2 times as long as the edges of this unit cube. *(Lesson 14.2)*

26.

![Cube Drawing](image)

Complete the drawing of this rectangular prism. *(Lesson 14.2)*

27.

![Rectangular Prism Drawing](image)
### Name each solid. Then write the number of faces and vertices, and the shapes of the faces. (Lesson 14.3)

<table>
<thead>
<tr>
<th>Solid</th>
<th>Number of Faces</th>
<th>Number of Vertices</th>
<th>Shapes of Faces</th>
</tr>
</thead>
<tbody>
<tr>
<td>28.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Name the solid formed from each net. (Lesson 14.3)

<table>
<thead>
<tr>
<th>30.</th>
<th>31.</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Net for solid 30." /></td>
<td><img src="image" alt="Net for solid 31." /></td>
</tr>
</tbody>
</table>
Cumulative Review for Chapters 13 and 14

Find the surface area of each prism. *(Lesson 14.4)*

32. 

33. 

These solids are built using 1-inch cubes. Find and compare their volumes. *(Lesson 14.5)*

34. 

Solid ________ has a lesser volume than solid _________.

Length = ________ in. 
Width = ________ in. 
Height = ________ in. 
Volume = ________ in.³
Find the volume of each rectangular prism. (Lesson 14.6)

35. \[ \text{Volume} = \text{length} \times \text{width} \times \text{height} \]

36. \[ \text{Volume} = \text{length} \times \text{width} \times \text{height} \]

Find the volume of water in each container in liters and milliliters. (Lesson 14.6)

37. \[ \text{Volume} = \text{length} \times \text{width} \times \text{height} \]

38. \[ \text{Volume} = \text{length} \times \text{width} \times \text{height} \]
Find the volume of each rectangular prism. (Lesson 14.6)

39. \[ V = B \times h \]
   \[ h = 15 \text{ cm} \]
   \[ B = 100 \text{ cm}^2 \]

40. \[ V = B \times h \]
   \[ h = 8 \text{ ft} \]
   \[ B = 96 \text{ ft}^2 \]

Find the volume of each solid. (Lesson 14.7)

41. \[ V = l \times w \times h \]
   \[ l = 9 \text{ m} \]
   \[ w = 7 \text{ m} \]
   \[ h = 4 \text{ m} \]

42. \[ V = l \times w \times h \]
   \[ l = 12 \text{ ft} \]
   \[ w = 3 \text{ ft} \]
   \[ h = 6 \text{ ft} \]
Problem Solving

Solve. Show your work.

43. In the triangle $ABC$, $AB = 4$ centimeters, $BC = 7$ centimeters, and $AC$ is longer than 8 centimeters. If the length of $AC$ is in whole centimeters, what are the possible lengths of $AC$?

44. $ABCD$ is a trapezoid and $ABED$ is a parallelogram. $AB \parallel DC$, $AD \parallel BE$, and $BE = BC$. Find the measure of $\angle BCE$. 

\begin{center}
\includegraphics[width=0.5\textwidth]{triangle.png}
\end{center}
Solve. Show your work.

45. The length of a rectangular block is 20 inches. Its width is half its length. Its height is half its width. What is the surface area of the block?

46. A rectangular piece of poster board measures 70 centimeters by 50 centimeters. The net of a cube with 12-centimeter edges is cut from it. What is the area of the poster board left?
Solve. Show your work.

47. A rectangular prism is 15 inches long and 12 inches high. Its width is \( \frac{3}{5} \) its length. Find its volume.

48. Three cubes with edges measuring 5 inches are stacked on top of one another. What is the total volume of the three cubes?
Solve. Show your work.

49. The rectangular container shown contains 2 liters of water. How much more water must be added to fill the container completely? Give your answer in liters.

50. A container is 28 centimeters long, 14 centimeters wide, and 10 centimeters high. It is half-filled with juice. Kathy pours 500 milliliters of water into the container to make a juice drink. Find the volume of juice drink in the container now. Give your answer in liters and milliliters.
Solve. Show your work.

51. The fish tank shown is filled with 4 liters of water per minute from a faucet. How long does it take to fill the tank completely?