

**Accelerated Geometry  
Chapter 3 Review**

- D 1. Based on the pattern, what are the next two terms of the sequence? 9, 15, 21, 27, ... <sup>+6</sup>
- A. 33, 972      B. 39, 45      C. 162, 972      **D. 33, 39**

- C 2. Based on the pattern, what are the next two terms of the sequence?  $9, \frac{9}{5}, \frac{9}{25}, \frac{9}{125}, \frac{9}{625}, \dots$   <sup>$\times 5$</sup>
- A.  $\frac{9}{3125}, \frac{9}{3130}$       **C.  $\frac{9}{3125}, \frac{9}{15625}$**
- B.  $\frac{9}{630}, \frac{9}{3130}$       D.  $\frac{9}{630}, \frac{9}{635}$

- B 3. Based on the pattern, what is the next figure in the sequence?



- A.      **B.**       C.      D.

- D 4. Use the Law of Detachment to draw a conclusion from the two given statements.
- If two angles are complementary, then the sum of their measures is 90°.
- ∠E and ∠F are complementary.

- A.  $m\angle E + m\angle F = 180$       C.  $m\angle E \neq m\angle F$
- B.  $\angle E$  is congruent to  $\angle F$ .      **D.  $m\angle E + m\angle F = 90$**

- D 5. Use the Law of Detachment to draw a conclusion from the two given statements. If not possible, write *not possible*.

I can go to the concert if I can afford to buy a ticket.  
I can go to the concert.

- A. I can afford to buy a ticket.  
B. I cannot afford to buy the ticket.  
C. If I can go to the concert, I can afford the ticket.  
**D. not possible**

- D 6. Use the Law of Syllogism to draw a conclusion from the two given statements.
- If you exercise regularly, then you have a healthy body.
- If you have a healthy body, then you have more energy.

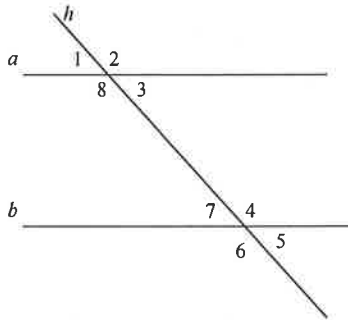
- A. If you do not have more energy, then you do not exercise regularly.  
B. You have more energy.  
C. You have a healthy body.  
**D. If you exercise regularly, then you have more energy.**

B

7. Use the Law of Syllogism to draw a conclusion from the two given statements.  
 If two lines intersect and form right angles, then the lines are perpendicular.  
 If two lines are perpendicular, then they intersect and form 90° angles.

- A. The lines are perpendicular.  
 B. If two lines intersect and form right angles, then they intersect and form 90° angles.  
 C. The lines intersect and form 90° angles.  
 D. If two lines do not intersect and form 90° angles, then they do not form right angles.

Use the diagram to answer #52 and #53.



A

8. Identify a pair of alternate exterior angles.

- A.  $\angle 1$  and  $\angle 5$   
 B.  $\angle 8$  and  $\angle 4$   
 C.  $\angle 2$  and  $\angle 5$   
 D.  $\angle 1$  and  $\angle 8$

D

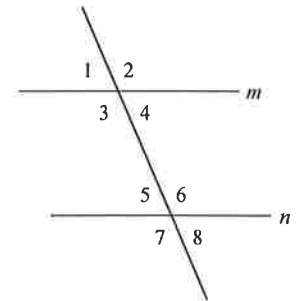
9. What are three pairs of corresponding angles?

- A. angles 1 & 2, 3 & 8, and 4 & 7  
 B. angles 3 & 4, 7 & 8, and 1 & 6  
 C. angles 1 & 7, 2 & 4, and 6 & 7  
 D. angles 1 & 7, 8 & 6, and 2 & 4

C

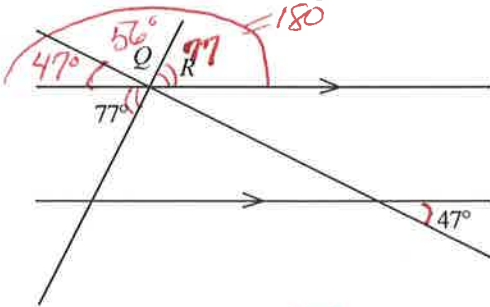
10. Use the diagram to the right to state the relationship between  $\angle 4$  and  $\angle 5$ ?

- A. corresponding angles  
 B. same-side interior angles  
 C. alternate interior angles  
 D. alternate exterior angles



B

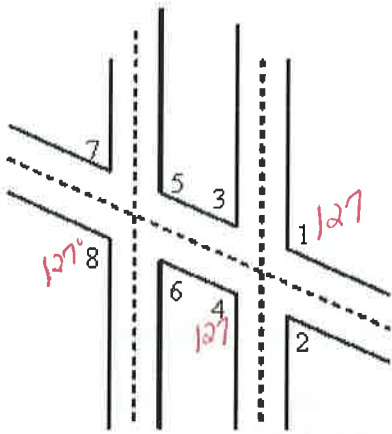
11. Find  $m\angle Q$ . The diagram is not to scale.



$$\begin{array}{r} 177 \\ + 47 \\ \hline 124 \end{array} \quad \begin{array}{r} 180 \\ - 124 \\ \hline 56 \end{array}$$

- A. 66  
 B. 56  
 C. 124  
 D. 103

This diagram of airport runway intersections shows two parallel runways. A taxiway crosses both runways.



$$\begin{array}{r} 127 \\ + 127 \\ \hline 254 \end{array}$$

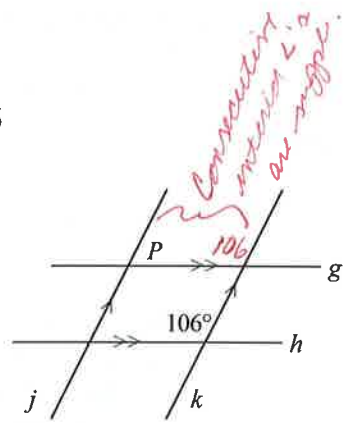
A 12. If  $\angle 8$  measures 127, what is the sum of the measures of  $\angle 1$  and  $\angle 4$ ?

- A. 254      B. 307      C. 127      D. 106

B 13. Use the diagram to the right to find  $m\angle P$ . The diagram is not to scale.

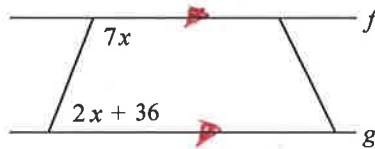
- A. 106      B. 74      C. 64      D. 84

$$180 - 106 = 74$$



D 14. The expressions in the figure below represent the measures of two angles. Find the value of  $x$ .  $f \parallel g$ . The diagram is not to scale.

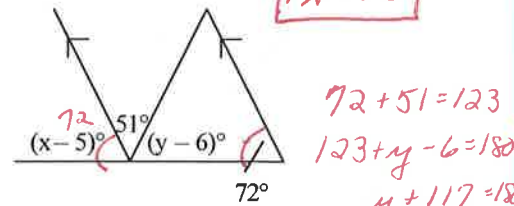
- A. 15      B. 17      C. -16      D. 16



$$\begin{aligned} 7x + 2x + 36 &= 180 \\ 9x + 36 &= 180 \\ 9x &= 144 \\ x &= 16 \end{aligned}$$

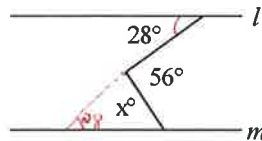
B 15. Find the values of  $x$  and  $y$ . The diagram is not to scale.

- A.  $x = 51, y = 63$       C.  $x = 63, y = 77$   
 B.  $x = 77, y = 63$       D.  $x = 77, y = 65$



A 16. Find the value of  $x$  for which  $l$  is parallel to  $m$ . The diagram is not to scale.

- A. 28      B. 56      C. 84      D. 152



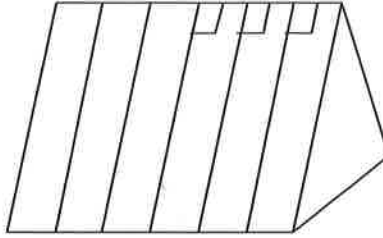
Ext.  $\angle$  Sum Thm  
 $28 + x = 56$   
 $x = 28$

$x + 5 = 72$   
 $+ 5 + 5$   
 $x = 77$

$y = 63$

D

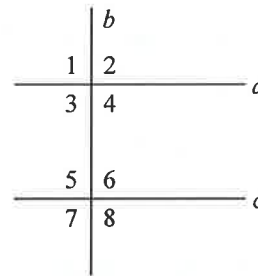
17. Each sheet of metal on a roof is perpendicular to the top line of the roof. What can you conclude about the relationship between the sheets of roofing? Justify your answer.



- A. The sheets of metal are all parallel to each other by the Transitive Property of Parallel Lines.
- B. The sheets of metal are all parallel to each other by the Alternate Interior Angles Theorem.
- C. The sheets of metal are all parallel to each other because in a plane, if a line is perpendicular to one of two parallel lines, then it is also perpendicular to the other.
- D.** The sheets of metal are all parallel to each other because in a plane, if two lines are perpendicular to the same line, then they are parallel to each other.

B

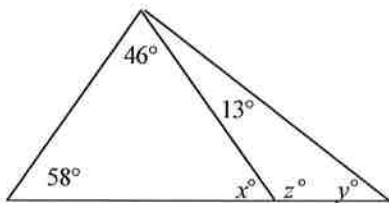
18. If  $c \perp b$  and  $a \parallel c$ , what do you know about the relationship between lines  $a$  and  $b$ ? Justify your conclusion with a theorem or postulate.



- A.  $a \parallel b$ , by the Perpendicular Transversal Theorem
- B.**  $a \perp b$ , by the Perpendicular Transversal Theorem
- C.  $a \perp b$ , by the Alternate Exterior Angles Theorem
- D. not enough information

B

19. Find the values of  $x$ ,  $y$ , and  $z$ . The diagram is not to scale.



$46 + 58 = z$   
 $104 = z$   
 $180 - 104 = x$   
 $76 = x$

$13 + 104 + y = 180$   
 $117 + y = 180$   
 $y = 63$

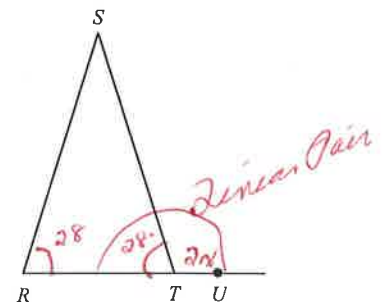
- ~~A.~~  $x = 63, y = 104, z = 76$
- B.**  $x = 76, y = 63, z = 104$
- C.  $x = 63, y = 76, z = 104$
- ~~D.~~  $x = 76, y = 104, z = 63$

D

20. Find the value of  $x$ . The diagram is not to scale.

Given:  $\angle SRT \cong \angle STR$ ,  $m\angle SRT = 28$ ,  $m\angle STU = 2x$

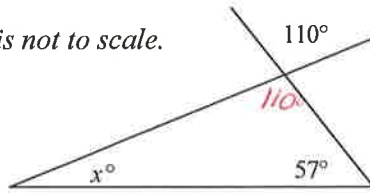
- A. 28
- B. 30
- C. 14
- D.** 76



$180 = 28 + 2x$   
 $152 = 2x$   
 $76 = x$

D

21. Find the value of  $x$ . The diagram is not to scale.



$$110 + 57 = 167$$

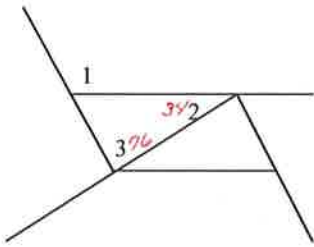
$$167 + x = 180$$

$$x = 13$$

- A. 33      B. 70      C. 23      **D. 13**

B

22. The folding chair has different settings that change the angles formed by its parts. Suppose  $m\angle 2$  is 34 and  $m\angle 3$  is 76. Find  $m\angle 1$ . The diagram is not to scale.



Exterior Angle Sum Thm

$$m\angle 1 = 34 + 76$$

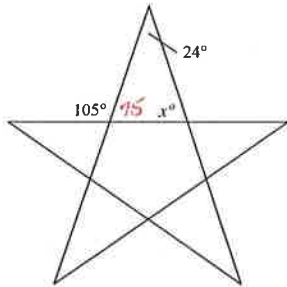
$$m\angle 1 = 110$$

- A. 130      **B. 110**      C. 100      D. 120

C

23. A star patterned quilt has a star with the angles shown. What is the value of  $x$ ?

The diagram is not to scale.



$$x + 24 = 105$$

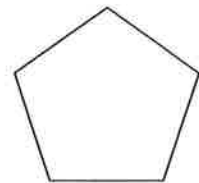
$$x = 81$$

- A. 99      B. 91      **C. 81**      D. 105

C

24. Find the sum of the measures of the interior angles of the figure to the right.

- A. 360      B. 900      **C. 540**      D. 720



$$S = 180(5 - 2)$$

$$S = 180(3)$$

$$S = 540$$

C

25. What is the measure of one angle in a regular 30-gon?

- A. 192      B. 84      **C. 168**      D. 5040

$$S = 180(30 - 2)$$

$$S = 180(28)$$

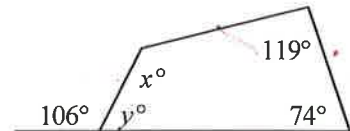
$$S = 5040$$

$$\frac{5040}{30} = 168$$

C

26. Find the missing values of the variables. The diagram is not to scale.

- A.  $x = 74, y = 103$       **C.  $x = 93, y = 74$**   
 B.  $x = 74, y = 93$       D.  $x = 103, y = 119$



$$S = 180(4 - 2)$$

$$S = 180(2)$$

$$S = 360$$

$$119 + 74 + 74 + x = 360$$

$$267 + x = 360$$

$$x = 93$$

$$106 + y = 180$$

$$y = 74$$

B

27. Find the value of  $x$ . The diagram is not to scale.

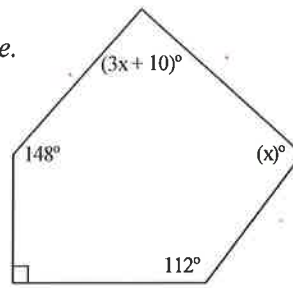
$S = 540$

$540 = 3x + 10 + x + 148 + 90 + 112$

$540 = 4x + 360$

$180 = 4x$

$45 = x$



Pentagon

A. 90

B. 45

C. 35

D. 145

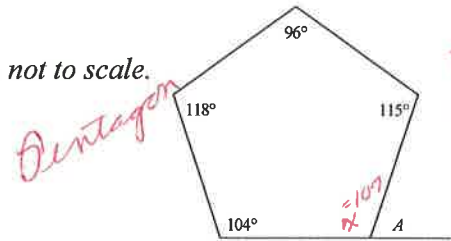
D

28. Refer to the diagram to the right. Find  $m\angle A$ . The diagram is not to scale.

$118 + 96 + 115 + 104 + x = 540$

$433 + x = 540$

$x = 107$



Pentagon

Not regular!

$$\begin{array}{r} 180 \\ - 107 \\ \hline 73 \end{array}$$

A. 107

B. 117

C. 63

D. 73

A

29. The sum of the measures of two exterior angles of a triangle is 264. What is the measure of the third exterior angle?

$\text{Sum of ext. } \angle\text{'s} = 360 \therefore 360 - 264 =$

A. 96

B. 84

C. 106

D. 86

B

30. How many sides does a regular polygon have if each exterior angle measures 30?

$\frac{360}{30} = 12$

A. 15 sides

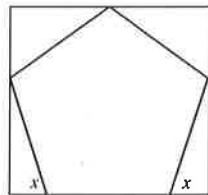
B. 12 sides

C. 14 sides

D. 11 sides

D

31. This jewelry box has the shape of a regular pentagon. It is packaged in a rectangular box as shown here. The box uses two pairs of congruent right triangles made of foam to fill its four corners. Find the measure of the foam angle marked.



$\frac{360}{5} = 72^\circ$

A. 54°

B. 36°

C. 18°

D. 72°

B

32. Use *less than*, *equal to*, or *greater than* to complete this statement: The measure of each exterior angle of a regular 10-gon is less than the measure of each exterior angle of a regular 6-gon.

$\frac{360}{10} = 36 < \frac{360}{6} = 60$

A. cannot tell

B. less than

C. greater than

D. equal to

C

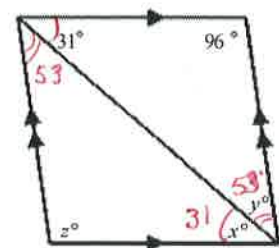
33. Find the values of the variables in the parallelogram. The diagram is not to scale.

A.  $x = 53, y = 31, z = 96$

B.  $x = 31, y = 53, z = 96$

C.  $x = 53, y = 53, z = 127$

D.  $x = 31, y = 53, z = 127$



$$\begin{array}{r} 96 \\ + 31 \\ \hline 127 \\ 180 \\ - 127 \\ \hline 53 \end{array}$$

$$\begin{array}{r} 53 + 31 + z = 180 \\ 84 + z = 180 \\ \hline z = 96 \end{array}$$