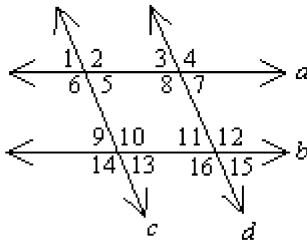


Chapter 3 Exam

Multiple Choice

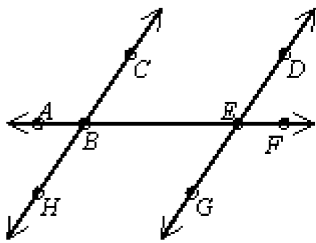
Identify the choice that best completes the statement or answers the question.

- ____ 1. Which angles are corresponding angles?



- | | |
|------------------------------|------------------------------|
| a. $\angle 1$ and $\angle 9$ | c. $\angle 5$ and $\angle 1$ |
| b. $\angle 2$ and $\angle 1$ | d. none of these |

- ____ 2. Which statement is true?



- $\angle FEG$ and $\angle DEB$ are same-side interior angles.
- $\angle CBE$ and $\angle DEB$ are alternate angles.
- $\angle CBE$ and $\angle DEB$ are same-side interior angles.
- $\angle FEG$ and $\angle CBE$ are alternate angles.

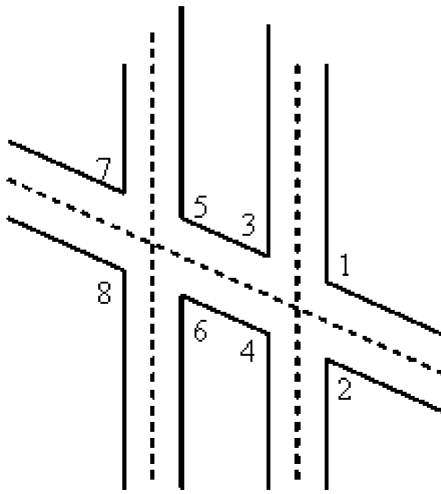
- ____ 3. Complete the statement. If a transversal intersects two parallel lines, then ____.

- corresponding angles are supplementary
- same-side interior angles are complementary
- alternate interior angles are congruent
- none of these

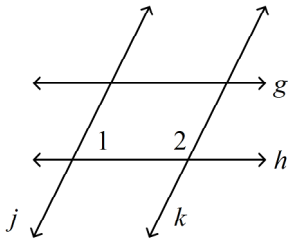
- ____ 4. Complete the statement. If a transversal intersects two parallel lines, then ____ angles are supplementary.

- | | |
|-----------------------|-----------------------|
| a. acute | c. same-side interior |
| b. alternate interior | d. corresponding |

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



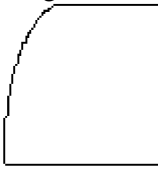
- _____ 5. How are $\angle 6$ and $\angle 2$ related?
- a. corresponding angles
 - b. alternate interior angles
 - c. same-side interior angles
 - d. none of these
- _____ 6. Which lines, if any, can you conclude are parallel given that $m\angle 1 + m\angle 2 = 180$? Justify your conclusion with a theorem or postulate.



- a. $j \parallel k$, by the Converse of the Same-Side Interior Angles Theorem
- b. $j \parallel k$, by the Converse of the Alternate Interior Angles Theorem
- c. $g \parallel h$, by the Converse of the Alternate Interior Angles Theorem
- d. $g \parallel h$, by the Converse of the Same-Side Interior Angles Theorem

_____ 7. Which figure is a convex polygon?

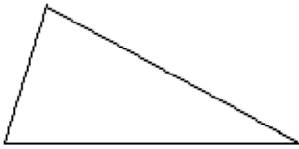
a.



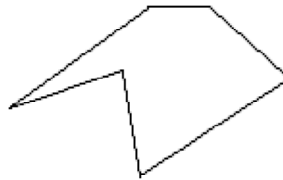
c.



b.



d.



_____ 8. The Polygon Angle-Sum Theorem states: The sum of the measures of the angles of an n -gon is _____.

a. $\frac{n-2}{180}$

b. $(n-1)180$

c. $\frac{180}{n-1}$

d. $(n-2)180$

_____ 9. Complete this statement. The sum of the measures of the exterior angles of an n -gon, one at each vertex, is _____.

a. $(n-2)180$

b. 360

c. $\frac{(n-2)180}{n}$

d. $180n$

_____ 10. Complete this statement. A polygon whose sides all have the same length is said to be _____.

a. regular

b. equilateral

c. equiangular

d. convex

_____ 11. Is the line through points $P(6, -2)$ and $Q(-3, -4)$ parallel to the line through points $R(-1, -5)$ and $S(1, 0)$? Explain.

a. Yes; the lines are both vertical.

b. No, one line has slope, the other has no slope.

c. No, the lines have unequal slopes.

d. Yes; the lines have equal slopes.

_____ 12. Which two lines are parallel?

I. $5y = -3x - 5$

II. $5y = -4 - 3x$

III. $3y - 2x = -1$

a. I and II

c. II and III

b. I and III

d. No two of the lines are parallel.

_____ 13. Is the line through points $P(3, 0)$ and $Q(8, 6)$ perpendicular to the line through points $R(-3, 7)$ and $S(3, 12)$? Explain.

a. No; their slopes are not equal

b. Yes; their slopes have product -1

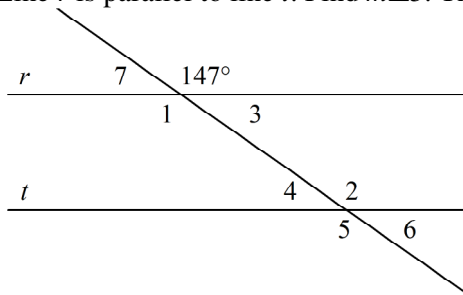
c. No, their slopes are not opposite reciprocals.

d. Yes; their slopes are equal.

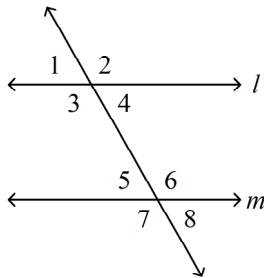
- ____ 14. Are the lines $y = -x + 7$ and $4x - 4y = 16$ perpendicular? Explain.
- Yes; their slopes are equal.
 - No; their slopes are not equal
 - No; their slopes are not opposite reciprocals.
 - Yes; their slopes have product -1 .

Short Answer

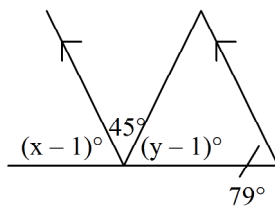
15. Line r is parallel to line t . Find $m\angle 5$. The diagram is not to scale.



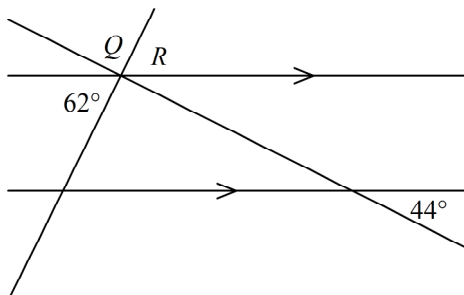
16. Find the value of the variable if $m \parallel l$, $m\angle 1 = 6x + 14$ and $m\angle 5 = 8x + 18$. The diagram is not to scale.



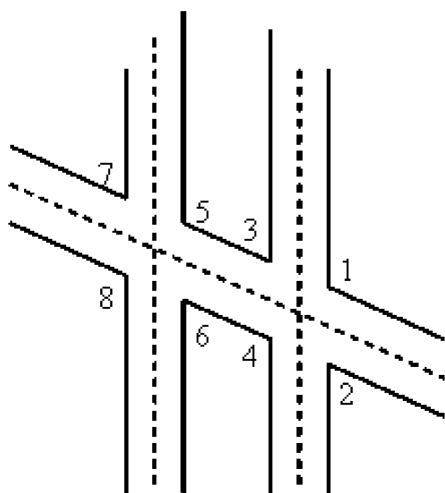
17. Find the values of x and y . The diagram is not to scale.



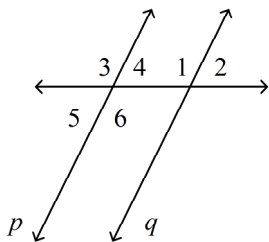
18. Find $m\angle Q$. The diagram is not to scale.



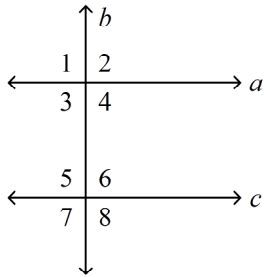
This diagram of airport runway intersections shows two parallel runways. A taxiway crosses both runways.



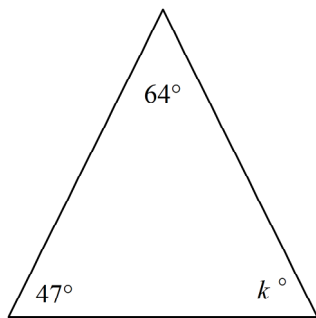
19. If $\angle 8$ measures 129, what is the sum of the measures of $\angle 1$ and $\angle 4$?
20. $m\angle 1 = 4x$ and $m\angle 3 = 124$. Find the value of x for p to be parallel to q . The diagram is not to scale.



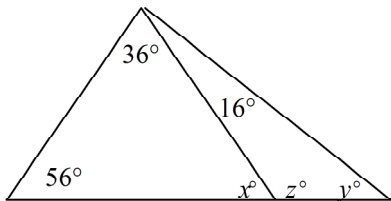
21. If $c \perp b$ and $a \parallel c$, what is $m\angle 2$?



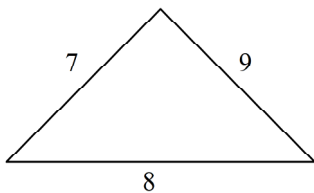
22. Find the value of k . The diagram is not to scale.



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



24. Classify the triangle by its sides. The diagram is not to scale.

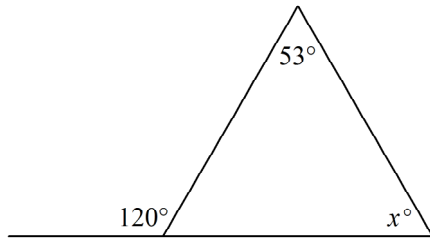


25. Classify $\triangle ABC$ by its angles, when $m\angle A = 27$, $m\angle B = 90$, and $m\angle C = 63$.

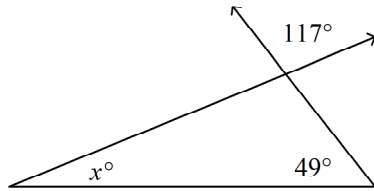
Name: _____

ID: C

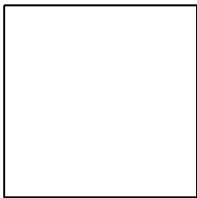
26. Find the value of x . The diagram is not to scale.



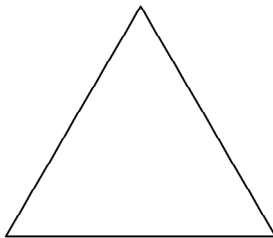
27. Find the value of the variable. The diagram is not to scale.



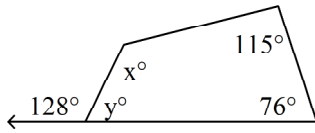
28. Classify the polygon by its sides.



29. The chips used in the board game MathFuries have the shape of hexagons. How many sides does each MathFuries chip have?
30. Find the sum of the measures of the angles of the figure.



31. Find the missing angle measures. The diagram is not to scale.



32. The sum of the measures of two exterior angles of a triangle is 267. What is the measure of the third exterior angle?
33. Use *less than*, *equal to*, or *greater than* to complete the statement. The measure of each exterior angle of a regular 7-gon is _____ the measure of each exterior angle of a regular 4-gon.
34. Find $m\angle A$. The diagram is not to scale.

