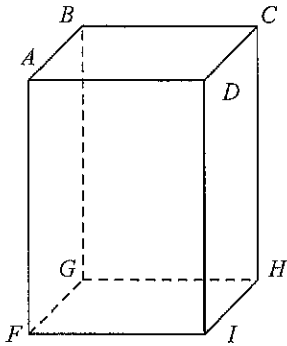


Test - Chapter 3 Geometry

Multiple Choice

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

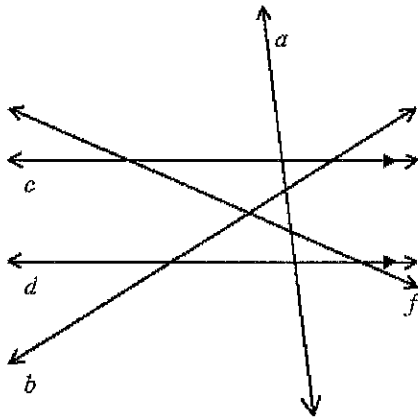
Refer to the figure below.



- _____ 1. Name all segments skew to \overline{BC} .
- | | |
|---|---|
| a. $\overline{FI}, \overline{AD}, \overline{FA}, \overline{DI}$ | c. $\overline{CD}, \overline{AB}, \overline{BG}, \overline{CH}$ |
| b. $\overline{FG}, \overline{GH}, \overline{HI}, \overline{FI}$ | d. $\overline{GF}, \overline{HI}, \overline{DI}, \overline{AF}$ |
- _____ 2. Name all segments parallel to \overline{AB} .
- | | |
|---|--|
| a. $\overline{AD}, \overline{BC}, \overline{GH}, \overline{FI}$ | c. $\overline{CD}, \overline{FG}, \overline{HI}$ |
| b. $\overline{DI}, \overline{CH}, \overline{GH}, \overline{FI}$ | d. $\overline{GH}, \overline{AD}, \overline{FI}$ |
- _____ 3. Name all planes intersecting plane BAF .
- | | |
|-------------------------|-------------------------|
| a. BGH, CDA, FID, DIH | c. BCH, GFI, FGH, CBG |
| b. BCD, CHG, FID, FIH | d. DCH, DAF, CBG, CBA |

Identify the sets of lines to which the given line is a transversal.

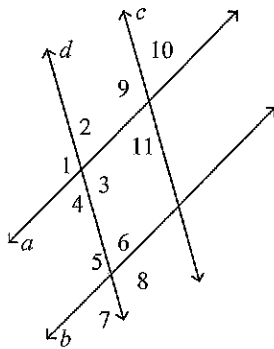
___ 4. line a



- a. lines c and b , f and d , c and f , c and d , b and d
- b. lines a and b , a and c , a and d , a and f
- c. lines f and d , c and f , c and d , b and d
- d. lines c and b , f and d

Given the following information, determine which lines, if any, are parallel. State the postulate or theorem that justifies your answer.

___ 5. $\angle 11 \cong \angle 2$

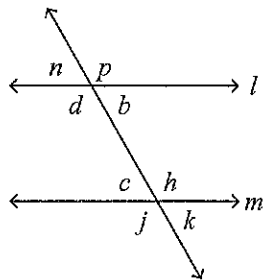


- a. $c \parallel d$; congruent corresponding angles
- b. $a \parallel b$; congruent corresponding angles
- c. $c \parallel d$; congruent alternate interior angles
- d. $a \parallel b$; congruent alternate interior angles

6. Which is a correct two-column proof?

Given: $l \parallel m$

Prove: $\angle p$ and $\angle k$ are supplementary.



a.

Statements	Reasons
1. $l \parallel m$	1. Given
2. $\angle p \cong \angle d$	2. Vertical Angles
3. $\angle d$ and $\angle c$ are supplementary.	3. Same-Side Interior Angles
4. $\angle c \cong \angle k$	4. Vertical Angles
5. $\angle p$ and $\angle k$ are supplementary.	5. Substitution

b.

Statements	Reasons
1. $l \parallel m$	1. Given
2. $\angle p \cong \angle k$	2. Corresponding Angles
3. $\angle d$ and $\angle c$ are supplementary.	3. Same-Side Exterior Angles
4. $\angle c \cong \angle k$	4. Vertical Angles
5. $\angle d$ and $\angle k$ are supplementary.	5. Substitution

c.

Statements	Reasons
1. $l \parallel m$	1. Given
2. $\angle p \cong \angle d$	2. Vertical Angles
3. $\angle b$ and $\angle k$ are supplementary.	3. Alternate Interior Angles
4. $\angle c \cong \angle k$	4. Vertical Angles
5. $\angle p$ and $\angle k$ are supplementary.	5. Same-Side Interior Angles

d. none of these

7. Write an equation in slope-intercept form of the line through points $S(-10, -3)$ and $T(-1, 1)$.

a. $y = -\frac{4}{9}x + \frac{13}{9}$

c. $y = -\frac{4}{9}x - \frac{13}{9}$

b. $y = \frac{4}{9}x - \frac{13}{9}$

d. $y = \frac{4}{9}x + \frac{13}{9}$

8. Which two lines are parallel?

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

II. $5y = -1 - 3x$

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

a. I and II

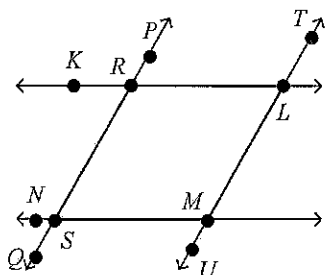
c. II and III

b. I and III

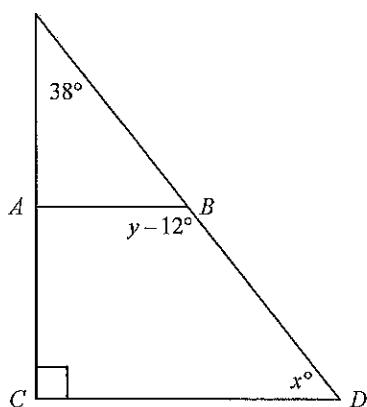
d. No, two of the lines are parallel.

Short Answer

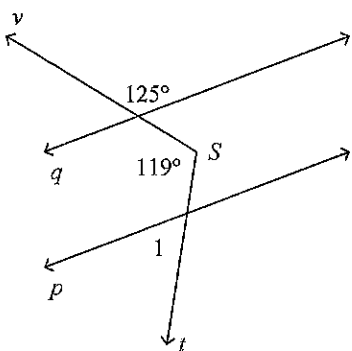
9. In the figure, $m\angle NML = 120$, $\overleftrightarrow{PQ} \parallel \overleftrightarrow{TU}$ and $\overleftrightarrow{KL} \parallel \overleftrightarrow{NM}$. Find the measure of angle PRK .



10. In the figure, $\overline{AB} \parallel \overline{CD}$. Find x and y .



11. In the figure, $p \parallel q$. Find $m\angle 1$.



Determine the slope of the line that contains the given points.

12. $T(-6, 0), V(5, 3)$

Determine whether \overleftrightarrow{WX} and \overleftrightarrow{YZ} are parallel, perpendicular, or neither.

13. $W(-2, -1), X(4, 1), Y(1, -4), Z(5, -4)$

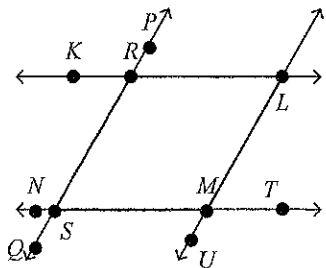
Write an equation in slope-intercept form of the line having the given slope and y-intercept.

14. $m: -\frac{2}{5}, b: -6$

15. $m: -\frac{4}{5}, (0, -3)$

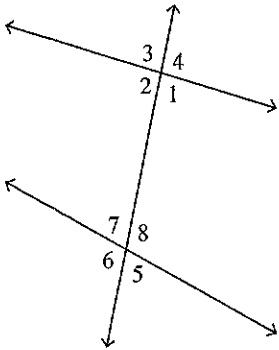
Write a two-column proof of the theorem.

16. If $\angle RSM \cong \angle SMU$, then $\overleftrightarrow{PS} \parallel \overleftrightarrow{LM}$.

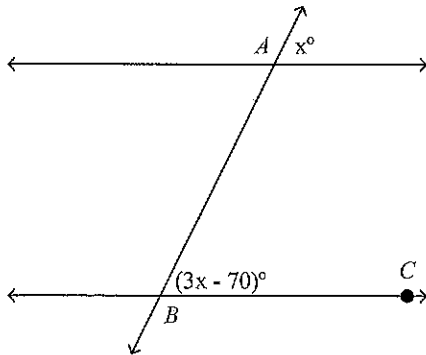


In 1995, the circulation of a local newspaper was 1970. In 1997, the circulation was 2330.

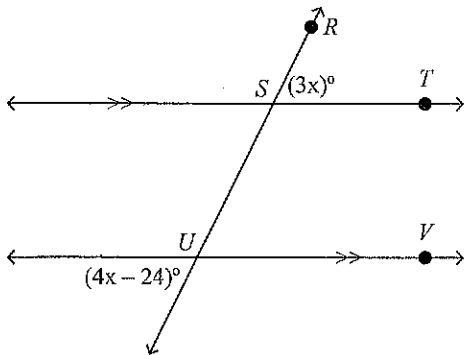
17. What is the rate of change in circulation from 1995 to 1997?
18. Write an equation in slope-intercept form of the line joining the points $A(-10, 50)$ and $B(10, -30)$.
19. Give an example of corresponding angles.



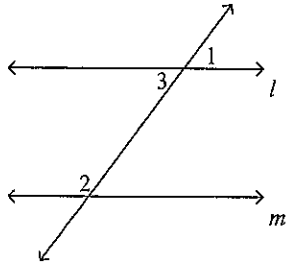
20. Find $m\angle ABC$.



21. Find $m\angle RST$.



22. Given: $m\angle 1 + m\angle 2 = 180^\circ$
 Prove: $l \parallel m$

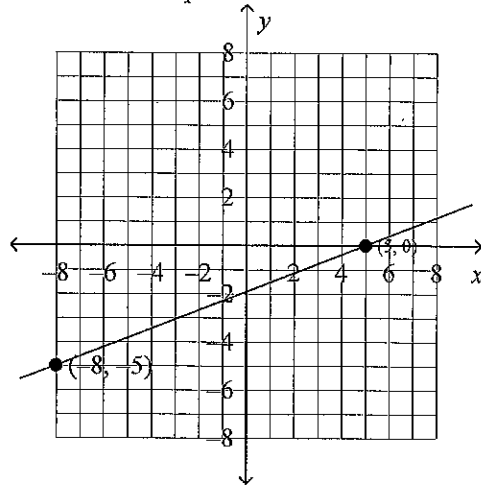


Complete the proof.

Proof:

Statements	Reasons
1. $m\angle 1 + m\angle 2 = 180^\circ$	1. Given
2. $m\angle 1 = m\angle 3$	2. [1]
3. $m\angle 3 + m\angle 2 = 180^\circ$	3. Substitution (Steps 1 and 2)
4. $l \parallel m$	4. [2]

23. What is the slope of the line shown?



Test - Chapter 3 Geometry Answer Section

MULTIPLE CHOICE

1. D
2. C
3. B
4. A
5. C
6. A
7. D
8. A

SHORT ANSWER

9. 120
10. $x = 52, y = 140$
11. $m\angle 1 = 64$
12. $\frac{3}{11}$
13. neither
14. $y = -\frac{2}{5}x - 6$
15. $y = -\frac{4}{5}x - 3$

16. Sample:

Given: $\angle RSM \cong \angle SMU$

Prove: $\overleftrightarrow{PS} \parallel \overleftrightarrow{LM}$

Proof:

Statements	Reasons
1. $\angle RSM \cong \angle SMU$	1. Given
2. $\angle SMU$ and $\angle LMT$ are vertical angles.	2. Definition of vertical angles
3. $\angle SMU \cong \angle LMT$	3. Vertical angles are congruent.
4. $\angle LMT$ and $\angle RSM$ are corresponding angles.	4. Definition of corresponding angles
5. $\angle LMT \cong \angle RSM$	5. Substitution
6. $\overleftrightarrow{PS} \parallel \overleftrightarrow{LM}$	6. If corresponding angles are congruent, then lines are parallel.

17. 180

Rate of change describes how a quantity is changing over time. The slope of a line can also be used to describe a rate of change.

$$\text{slope} = \frac{\text{vertical rise}}{\text{horizontal run}}$$

18. $y = -4x + 10$

The slope-intercept form of a linear equation is $y = mx + b$, where m is the slope of the line and b is the y -intercept.

Use the point-slope form and either point to write the equation.

$y - y_1 = m(x - x_1)$, (x_1, y_1) are the coordinates of any point on the line and $m = \frac{y_2 - y_1}{x_2 - x_1}$ is the slope of the

line.

19. $\angle 8$ and $\angle 4$

20. $m\angle ABC = 35^\circ$

21. $m\angle RST = 72^\circ$

22. [1] Vertical Angle Theorem

[2] Converse of the Same-Side Interior Angles Theorem

23. $\frac{5}{13}$