

Parallel Lines, Transversals, and Angles Worksheet

Vocabulary Review - Match each term with its definition.

Terms

1. Parallel Lines
2. Transversal
3. Corresponding Angles
4. Alternate Interior Angles
5. Alternate Exterior Angles
6. Same-Side Interior Angles

Definitions

- A. Angles on opposite sides of a transversal and outside the parallel lines
- B. Angles on opposite sides of a transversal and between the parallel lines
- C. A line that intersects two or more lines
- D. Lines that never intersect and remain the same distance apart
- E. Angles in matching positions when a transversal crosses two lines
- F. Angles on the same side of a transversal and between parallel lines

Part A: Identify the Angle Relationship - Name the relationship between each pair of angles.

Choose from:

Corresponding Angles

Alternate Interior Angles

Alternate Exterior Angles

Same-Side Interior Angles

Vertical Angles

7. Two angles are in matching corners when a transversal crosses parallel lines. _____
 8. Two angles are between the parallel lines and on opposite sides of the transversal. _____
 9. Two angles are outside the parallel lines and on opposite sides of the transversal. _____
 10. Two angles are between the parallel lines and on the same side of the transversal. _____
 11. Two angles share the same vertex and are opposite each other. _____
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Part B: Find the Missing Angle

Use the facts:

Corresponding, Alternate Interior, Alternate Exterior, and Vertical angles are **CONGRUENT**.

Same-side interior angles are **SUPPLEMENTARY**.

12. If a **Corresponding Angle** measures 65° , what is the measure of its corresponding partner? _____ $^\circ$
13. If an **Alternate Interior** angle measures 110° , what is the measure of its alternate interior partner? _____ $^\circ$
14. If two same-side **Interior Angles** are supplementary and one angle is 75° , what is the other angle? _____ $^\circ$
15. If an **Alternate Exterior Angle** measures 132° , what is the measure of its alternate exterior partner? _____ $^\circ$
16. If one **Vertical Angle** measures 48° , what is the measure of the opposite vertical angle? _____ $^\circ$
17. If one same-side **Interior Angle** measures 98° , what is the other angle? _____ $^\circ$
18. If one **Corresponding Angle** measures 125° , what is its matching angle? _____ $^\circ$
19. If one **Alternate Interior** angle measures 84° , what is its partner angle? _____ $^\circ$
20. If one angle in a **Linear** pair measures 145° , what is the other angle? _____ $^\circ$

Part C: Multiple Choice

21. When two parallel lines are cut by a transversal, corresponding angles are:
 - a) Supplementary
 - b) Congruent
 - c) Complementary
 - d) Vertical
22. Alternate interior angles are:
 - a) Always supplementary
 - b) Always complementary
 - c) Congruent when lines are parallel
 - d) Never congruent
23. Same-side interior angles are:
 - a) Congruent
 - b) Supplementary
 - c) Vertical
 - d) Equal to 90°
24. Vertical angles are:
 - a) Supplementary
 - b) Adjacent
 - c) Congruent
 - d) Parallel
25. A transversal is:
 - a) A line that intersects two or more lines
 - b) A pair of parallel lines
 - c) A line segment
 - d) An angle pair

Part D: Solve for a, b, c, and d

26. Corresponding angles measure $(3e + 5)^\circ$ and 80° . Find e.

$$3e + 5 = 80$$

$$3e = 80 - 5$$

$$3e = 75$$

$$e = 75 \div 3$$

$$e = 25$$

27. Alternate interior angles measure $(4a - 8)^\circ$ and 60° . Find a.

$$\square a - \square = \square$$

$$4a = 60 + \square$$

$$4a = \square$$

$$a = \square$$

28. Same-side interior angles measure $(2b + 10)^\circ$ and 90° . Find b.

$$(2b + \square) + 90 = 180$$

$$\square b + \square = 180$$

$$2b = 180 - \square$$

$$2b = \square$$

$$b = \square$$

29. Vertical angles measure $(5c - 15)^\circ$ and 85° . Find c.

$$\square c - 15 = \square$$

$$5c = 85 + \square$$

$$5c = \square$$

$$C = \square$$
