Name: _____

# Angle Equations with Parallel Lines

Write and solve an equation to find x.

**Learn:** Use the angle relationship (equal, or adding to 180°) to write an equation, then solve for x.

**Example:** Two parallel lines are cut by a transversal. Alternate interior angles measure (2x + 10)° and (1x + 32)°. Find x.

Answer: x = 22

1. Two parallel lines are cut by a transversal. Same-side interior angles measure (4x + 23)° and 93°. Find x.

   Answer: _____

2. Two parallel lines are cut by a transversal. Alternate interior angles measure (3x + 9)° and (1x + 19)°. Find x.

   Answer: _____

3. Two parallel lines are cut by a transversal. Same-side interior angles measure (5x + 8)° and 52°. Find x.

   Answer: _____

4. Two parallel lines are cut by a transversal. Same-side interior angles measure (2x + 17)° and 151°. Find x.

   Answer: _____

5. Two parallel lines are cut by a transversal. Same-side interior angles measure (4x + 16)° and 120°. Find x.

   Answer: _____

6. Two parallel lines are cut by a transversal. Same-side interior angles measure (3x + 7)° and 125°. Find x.

   Answer: _____

7. Two parallel lines are cut by a transversal. Same-side interior angles measure (4x + 18)° and 98°. Find x.

   Answer: _____

8. Two parallel lines are cut by a transversal. Same-side interior angles measure (4x + 34)° and 46°. Find x.

   Answer: _____

Name: **ANSWER KEY**

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Write and solve an equation to find x.

**Learn:** Use the angle relationship (equal, or adding to 180°) to write an equation, then solve for x.

**Example:** Two parallel lines are cut by a transversal. Alternate interior angles measure (2x + 10)° and (1x + 32)°. Find x.

Answer: x = 22

1. Two parallel lines are cut by a transversal. Same-side interior angles measure (4x + 23)° and 93°. Find x.

   Answer: x = 16

2. Two parallel lines are cut by a transversal. Alternate interior angles measure (3x + 9)° and (1x + 19)°. Find x.

   Answer: x = 5

3. Two parallel lines are cut by a transversal. Same-side interior angles measure (5x + 8)° and 52°. Find x.

   Answer: x = 24

4. Two parallel lines are cut by a transversal. Same-side interior angles measure (2x + 17)° and 151°. Find x.

   Answer: x = 6

5. Two parallel lines are cut by a transversal. Same-side interior angles measure (4x + 16)° and 120°. Find x.

   Answer: x = 11

6. Two parallel lines are cut by a transversal. Same-side interior angles measure (3x + 7)° and 125°. Find x.

   Answer: x = 16

7. Two parallel lines are cut by a transversal. Same-side interior angles measure (4x + 18)° and 98°. Find x.

   Answer: x = 16

8. Two parallel lines are cut by a transversal. Same-side interior angles measure (4x + 34)° and 46°. Find x.

   Answer: x = 25