



Name: _____

Due Date: _____

Teacher: _____

Parent Sign: _____

Math Worksheet for 8th Grade

Angles between intersecting lines

- Two lines intersect. If one angle measures 65 deg, what is the measure of the vertical (opposite) angle?
- Two angles form a linear pair. If one is 70 deg, what is the other?
- Two angles are complementary. If one is 35 deg, what is the other?
- Two angles are supplementary. If one is 123 deg, what is the other?
- Two parallel lines are cut by a transversal. If a corresponding angle is $4x + 10$ and the matching corresponding angle is $3x + 40$, find x and the angle measure.
- Lines l and m are parallel. For a transversal, two alternate interior angles are $2x + 15$ and $5x - 21$. Find x and the angle measure.
- Lines l and m are parallel and a transversal makes a 110 deg angle with line l . What is (a) the adjacent angle (linear pair) and (b) the corresponding angle on line m ?
- Two lines are perpendicular. One angle formed is $2x + 10$. Find x .
- Two lines intersect. Adjacent angles are $4x + 10$ and $6x - 20$. Find x and the measures of those two adjacent angles (and their vertical partners).
- Two parallel lines cut by a transversal create a pair of equal angles: $5x$ and $3x + 30$. Find x and the angle measure.
- Two parallel lines cut by a transversal produce consecutive interior angles $2x + 5$ and $3x - 10$. Find x and the measures.
- A transversal cuts two parallel lines and produces an acute angle of 48 deg. What is the measure of the obtuse angles formed?
- A transversal intersects two parallel lines. If a corresponding angle is $7x - 20$ and the corresponding angle on the other line is $2x + 25$, find x and the angle measure.
- Line l is perpendicular to line m . A transversal makes an angle of $2x + 20$ with line l , and that angle is a right angle. Find x .
- A transversal intersects two parallel lines. An alternate exterior angle measures $6x + 12$ and the corresponding angle measures $4x + 36$. Find x and the angle measure.
- Two angles are adjacent and supplementary: $x + 20$ and $2x + 10$. Find x and both angle measures.
- Two intersecting lines form adjacent angles $4x$ and $5x$. Find x and those two angle measures.
- A ladder leans against a vertical wall. The ladder makes a 70 deg angle with the ground. What is the angle between the ladder and the wall?
- Two lines are perpendicular. One of the angles formed is $4x - 10$. Find x .
- Two parallel lines are cut by a transversal. If one angle is $3x + 5$ and the corresponding angle is $2x + 35$, find x and that angle.
- Two parallel lines are cut by a transversal. If one right angle formed is $2(x + 10)$, find x .
- A transversal creates an angle 115 deg with one of two parallel lines. If another corresponding angle is $5x + 20$, find x .
- Line AB is parallel to line CD . A transversal makes angle $4x$ with AB while the adjacent interior angle on the other side of the transversal is $x + 60$ (they are supplementary). Find x and the two angle measures.

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24. Two lines intersect making vertical angles $3x$ and $x + 40$. If these are opposite (vertical) angles, find x and that angle measure.
25. Two parallel lines cut by a transversal produce corresponding angles $x - 5$ and $2x - 35$. Find x and the angle measure.
26. Two intersecting lines form vertical angles $2x + 10$ and $3x - 5$. Find x and the angle measure.
27. A transversal cuts two parallel lines producing one acute angle of 60 deg. What is the supplementary angle to it and what is the measure of its alternate interior angle?
28. Two lines are perpendicular. One angle is $x + 15$ and is a right angle. Find x .
29. Two parallel lines are cut by a transversal. One corresponding angle is $2x$ and the alternate interior angle is $x + 30$. Find x and the angle measure.
30. Two lines intersect and one of the angles measures 120 deg. What are the measures of the other three angles?
31. A vertical pole and the ground form a right angle. Sun rays make a 35 deg angle with the ground. What is the angle between the sun rays and the pole?
32. Two parallel lines are cut by a transversal giving consecutive interior angles $2x + 10$ and $3x + 20$. Find x and the two angle measures.
33. Two parallel lines cut by a transversal give equal alternate interior angles $7x - 60$ and $3x + 20$. Find x and the angle measure.
34. Two adjacent angles form a linear pair: $2x + 20$ and $4x + 10$. Find x and the measures of the two angles.
35. A road crosses two parallel railway tracks. The angle between the road and the first track is 64 deg. What is the angle between the road and the other track on the corresponding side?
36. In a parallel-lines setup, an acute angle is given by $x/2 + 10$ and is known to equal 50 deg. Find x .
37. Two lines intersect and one angle measures 150 deg. What are the measures of the other three angles?
38. Two parallel lines are cut by a transversal. One angle is $x + 25$, and its corresponding angle is $2x - 5$. Find x and the angle measure.
39. An angle formed by two intersecting lines is three times its supplementary angle. Find both angles.
40. An angle is $3x$ and its supplement is $2x + 30$. Find x and the two angle measures.
41. For two parallel lines cut by a transversal, angles A and B are interior consecutive angles with $A + B = 180$ and $A = 2B - 30$. Find A and B .
42. A transversal intersects two parallel lines creating two adjacent angles in a straight line in ratio $1:3$ (so they sum to 180 deg). Find the angles.
43. Two streets are parallel. A cross street makes an angle of 120 deg with the first street. What angle does it make with the second street on the same side of the cross street?
44. At an intersection two lines form opposite (vertical) angles $2x + 30$ and $x + 100$. Find x and that angle.
45. Two parallel lines are cut by a transversal. Alternate interior angles are $x + 40$ and $2x - 20$. Find x and the angle measure.
46. Two intersecting lines form adjacent angles $4x + 20$ and $2x + 40$. Find x and the measures of those two angles.



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47. A transversal intersects parallel lines creating an angle of 125° . What is the measure of the interior angle adjacent to it along the same line between the two parallels?
48. Two lines are perpendicular. Two adjacent angles formed are in the ratio 1:3 (they sum to 90° here because they are the two parts of a right angle). Find the two angle measures.
49. Two parallel lines cut by a transversal produce vertically opposite angles $x + 5$ and $3x - 15$. If these two expressions refer to the same vertical angle, find x and the angle measure.
50. A building is vertical and the sun's rays make a 40° angle with the ground. What is the angle between the sun's rays and the building?