

Grade 7 - Angle Relationships and Equations - Worksheet

Common Core 7.G.B.5 · maths-pdf.fr/en/

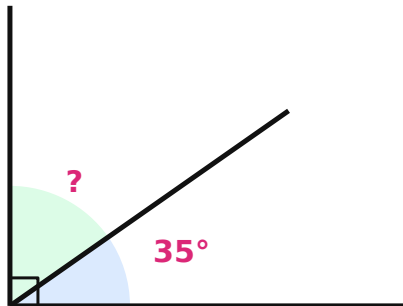
Name: _____ Class: _____ Date: ____/____/____

These 20 problems practice supplementary, complementary, vertical, and adjacent angles, and simple equations for an unknown angle (Common Core 7.G.B.5). They start with the basic skill, move to different kinds of numbers and multistep work, and end with six word problems set in everyday situations such as shopping, sports, and travel.

Show every step of your work, and use the answer key only after you have tried each problem.

Grade 7 · Common Core State Standards: **7.G.B.5**

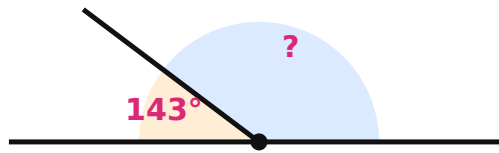
Exercise 1 - Complement



Complementary angles.

Find the complement of a 35° angle.

Exercise 2 - Supplement



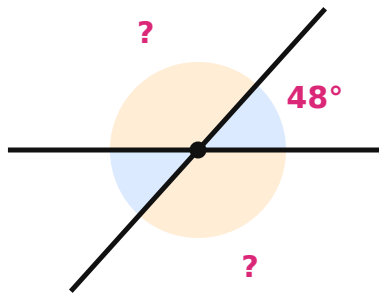
A linear pair.

Two angles form a linear pair, and one of them measures 143° . Find the measure of the other angle.

Exercise 3 - Complement of a decimal

Find the complement of a 72.5° angle.

Exercise 4 - Vertical and adjacent



Two crossing lines.

Two lines cross. One angle measures 48° . Find the vertical angle and each adjacent angle.

Exercise 5 - Complementary equation

Angles A and B are complementary. Angle A measures 65° . Write and solve an equation to find angle B.

Exercise 6 - Supplementary equation

Angles C and D are supplementary. Angle D measures 118° . Write and solve an equation to find angle C.

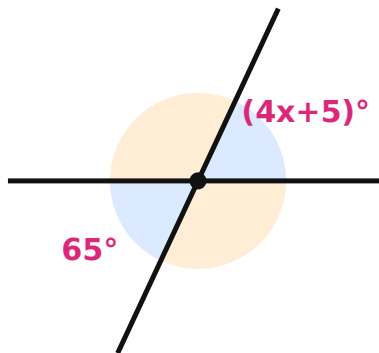
Exercise 7 - Two-step complement

Two complementary angles measure $(2x)^\circ$ and 30° . Write and solve an equation to find x , then the first angle.

Exercise 8 - Supplementary expressions

Two supplementary angles measure $(3x+10)^\circ$ and $(x+30)^\circ$. Find x and both angles.

Exercise 9 - Vertical angle equation



Vertical angles.

Two vertical angles measure $(4x+5)^\circ$ and 65° . Write and solve an equation to find x .

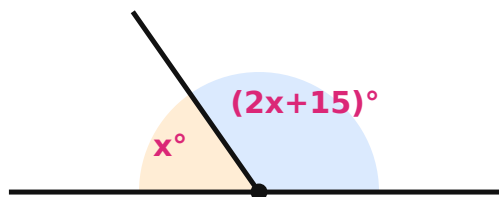
Exercise 10 - Ratio of complementary angles

Two complementary angles are in the ratio 2 : 3. Find each angle.

Exercise 11 - Three times as large

One of two supplementary angles is 3 times the other. Write and solve an equation to find both angles.

Exercise 12 - Linear pair



A linear pair.

A linear pair has measures x° and $(2x+15)^\circ$. Find x and both angles.

Exercise 13 - Angles on a line

Three angles on a straight line measure 40° , 75° , and x° . Find x .

Exercise 14 - Angles around a point

Four angles around a point measure 90° , 120° , 85° , and x° . Find x .

Exercise 15 - All four angles

Two lines cross and make an angle of 70° . Find the other three angles.

Exercise 16 - Ladder

A ladder leans on a wall and makes a 72° angle with the ground. The wall and ground meet at a right angle. Find the angle the ladder makes with the wall.

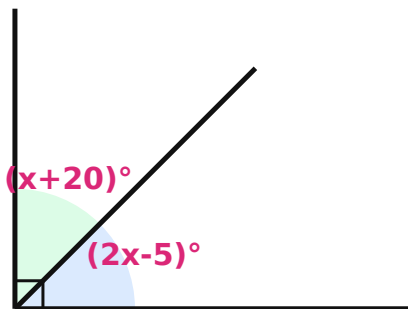
Exercise 17 - Ramp

A ramp makes a 15° angle with the ground. Find the supplementary angle formed on the other side of the ramp along the ground line.

Exercise 18 - Scissors

The blades of a pair of open scissors form an angle of 38° . Find the vertical angle on the other side of the pivot and the angle adjacent to the 38° angle.

Exercise 19 - Complementary expressions



Complementary expressions.

Two complementary angles measure $(2x-5)^\circ$ and $(x+20)^\circ$. Find x and both angles.

Exercise 20 - Pizza slices

A round pizza is cut into 8 equal slices. Find the angle at the center for one slice, and the supplement of that angle.