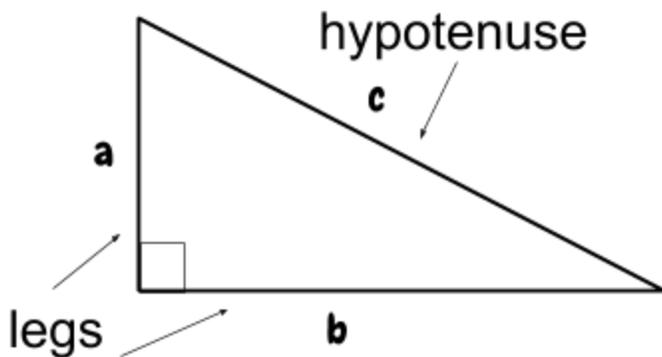


Pythagorean Theorem

You can go to [khanacademy.org](https://www.khanacademy.org) and search Pythagorean Theorem to watch a lesson on this topic.

<https://www.khanacademy.org/math/basic-geo/basic-geo-pythagorean-topic/basic-geo-pythagorean-theorem/v/the-pythagorean-theorem>

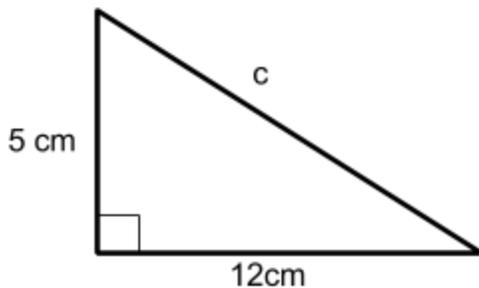
In any right triangle, the sum of the squares of the lengths of the legs is equal to the square of the length of the hypotenuse. The hypotenuse is opposite the right angle and is the longest side.



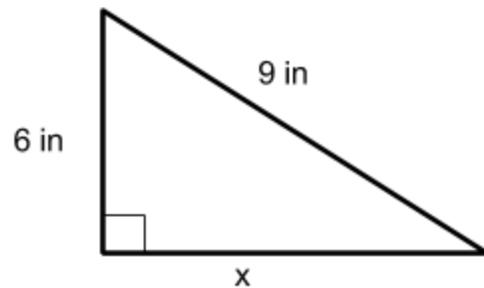
$$a^2 + b^2 = c^2$$

Find the missing side of each of the following triangles.

1.



2.



3. In a right triangle, the length of the hypotenuse is 15m and the length of the leg is 8 m. What is the length of the other leg, to the nearest tenth of a meter?

4. Jim works for a landscaping company. He must plant and stake a tree. The stakes are 2 ft from the base of the tree. They are connected to wires that attach to the trunk at a height of 5 ft. If there is 6 in of extra length at both ends of each wire, how long must each wire be, to the nearest inch?

Fractions

You can go to [khanacademy.org](https://www.khanacademy.org) and search fractions to watch a lesson on this topic.

<https://www.khanacademy.org/math/arithmetic/fractions>

Solve each of the following problems. Be sure all of your answers are given as a fraction in simplest form.

1. $\frac{2}{3} + \frac{4}{9}$

2. $\frac{5}{6} + \frac{2}{5}$

3. $9\frac{1}{3} + 4\frac{5}{7}$

4. $\frac{8}{17} - \frac{2}{9}$

5. $10\frac{5}{8} - \frac{9}{13}$

6. $2\frac{16}{23} - 8\frac{7}{13}$

7. $\frac{2}{3} \times \frac{9}{16}$

8. $15 \times \frac{3}{5}$

9. $8\frac{7}{9} \times 3\frac{1}{4}$

10. $\frac{2}{9} \div \frac{1}{6}$

11. $2\frac{2}{5} \div 2\frac{4}{5}$

12. $8\frac{3}{14} \div 2\frac{1}{3}$

13. A restaurant chef needs $8\frac{1}{2}$ lb of salmon. To get a good price, he buys more than he needs. He ends up with $4\frac{7}{8}$ lb too much. How much salmon did he buy?

14. During a recent wet spell, the water level in Jasper's Pond rose $2\frac{3}{4}$ in. The depth of the pond was then 10ft 3 in. What was the depth of the water in the pond before the wet spell?

15. One bag of popcorn holds $1\frac{5}{8}$ oz. Another holds $1\frac{3}{4}$ oz.
a. Which bag holds more popcorn?
b. How much more?
c. How much popcorn can the two bags hold in all?

16. You spend $\frac{3}{4}$ of your money on clothes and have \$21 left. How much did you have before you bought the clothes?

Scientific Notation

You can go to [khanacademy.org](https://www.khanacademy.org) and search scientific notation to watch a lesson on this topic.

<https://www.khanacademy.org/math/pre-algebra/exponents-radicals/scientific-notation/v/scientific-notation-101/a/scientific-notation-102>

Scientific Notation is a method used to write very large or very small numbers. To convert a number, move the decimal point so that it fits the rule below.



Convert each of the problems below into scientific notation.

1. 7,500,000,000 2. 0.00021 3. 54,500,000 4. 0.0000000005

Convert each of the following to standard notation.

5. 3.21×10^7 6. 5.9×10^{-8} 7. 1.006×10^{10} 8. 2.71×10^{-6}

9. Arrange the following numbers from least to greatest.

- 0.064×10^8 312×10^2 0.58×10^7

10. Arrange the following numbers from greatest to least.

- 55.8×10^{-5} 782×10^{-8} 9.1×10^{-5} 0.8×10^{-4}

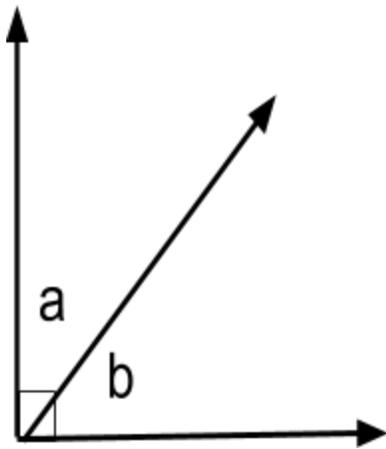
11. How many seconds are in one year? Express your answer as a number in scientific notation.

Angle Relationships

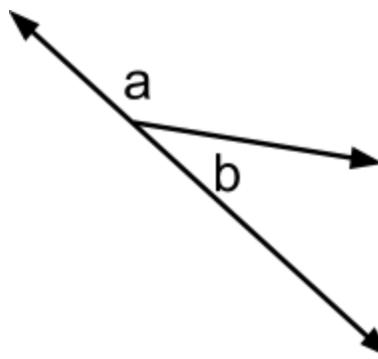
You can go to [khanacademy.org](https://www.khanacademy.org) and search supplementary and complementary angles to watch a lesson on this topic.

<https://www.khanacademy.org/math/basic-geo/basic-geo-angles/basic-geo-angle-relationships/v/complementary-and-supplementary-angles>

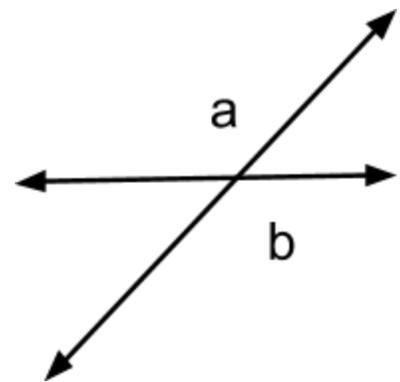
There are three main types of angle relationships.



Complementary Angles
Add Up to 90°

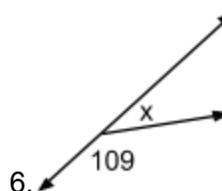
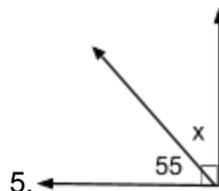
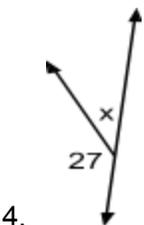
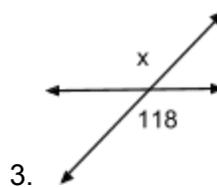
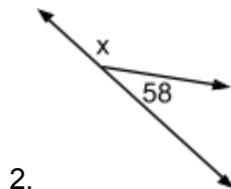
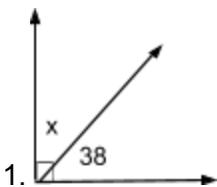


Supplementary Angles
Add Up to 180°



Vertical Angles
Are equal to each other

Find the value of x .



- Two angles are vertical. One angle is 42° . Find the measure of the other angle.
- Two angles are supplementary. One angle is 117° . Find the measure of the other angle.
- One angle is 37° . Find the measure of its complement.