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$$c^2 = a^2 + b^2 \rightarrow a^2 = c^2 - b^2 \rightarrow a = \sqrt{c^2 - b^2}$$

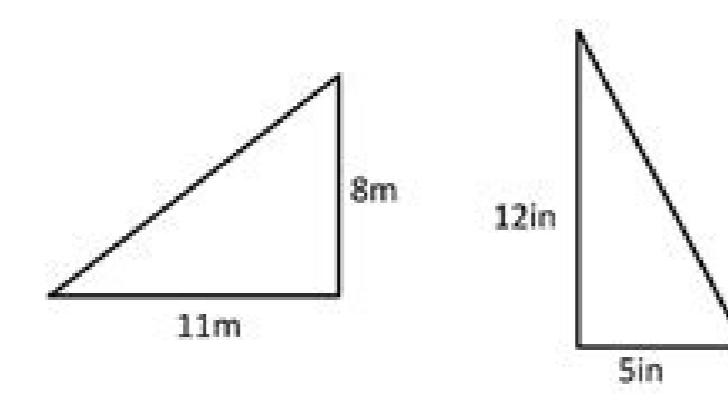
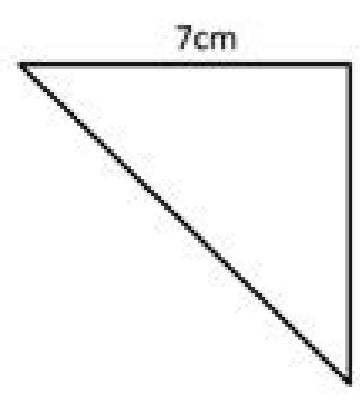
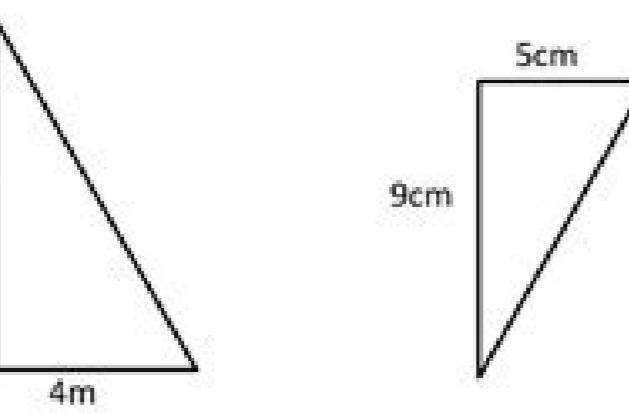
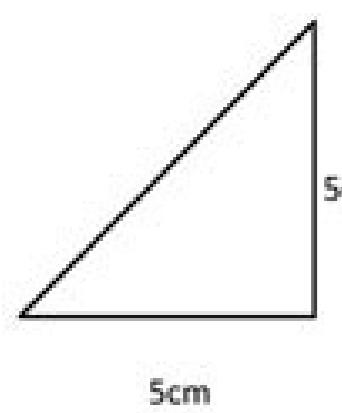
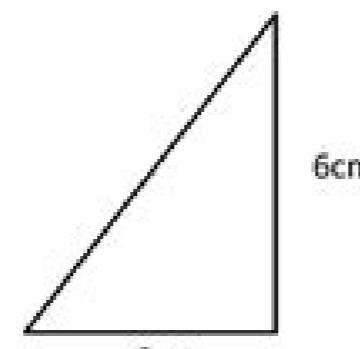
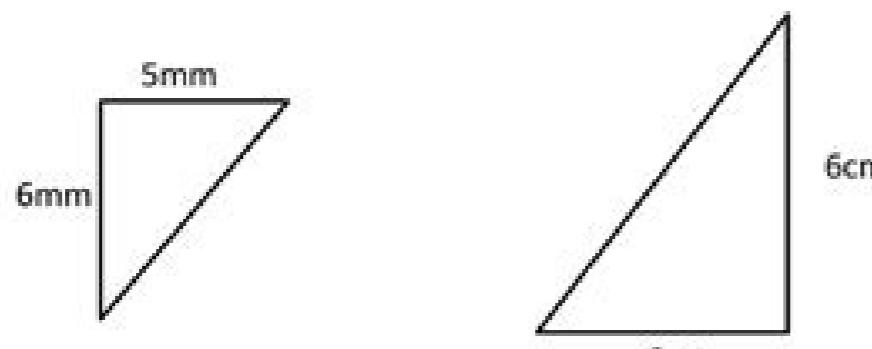
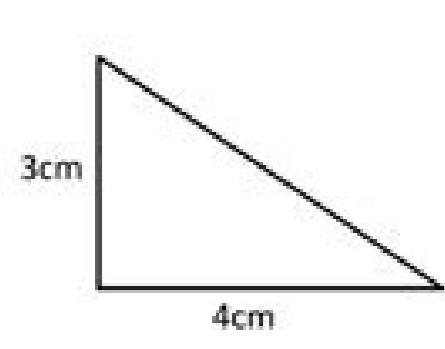
$$c^2 = a^2 + b^2 \rightarrow b^2 = c^2 - a^2 \rightarrow b = \sqrt{c^2 - a^2}$$

Name \_\_\_\_\_ Date \_\_\_\_\_

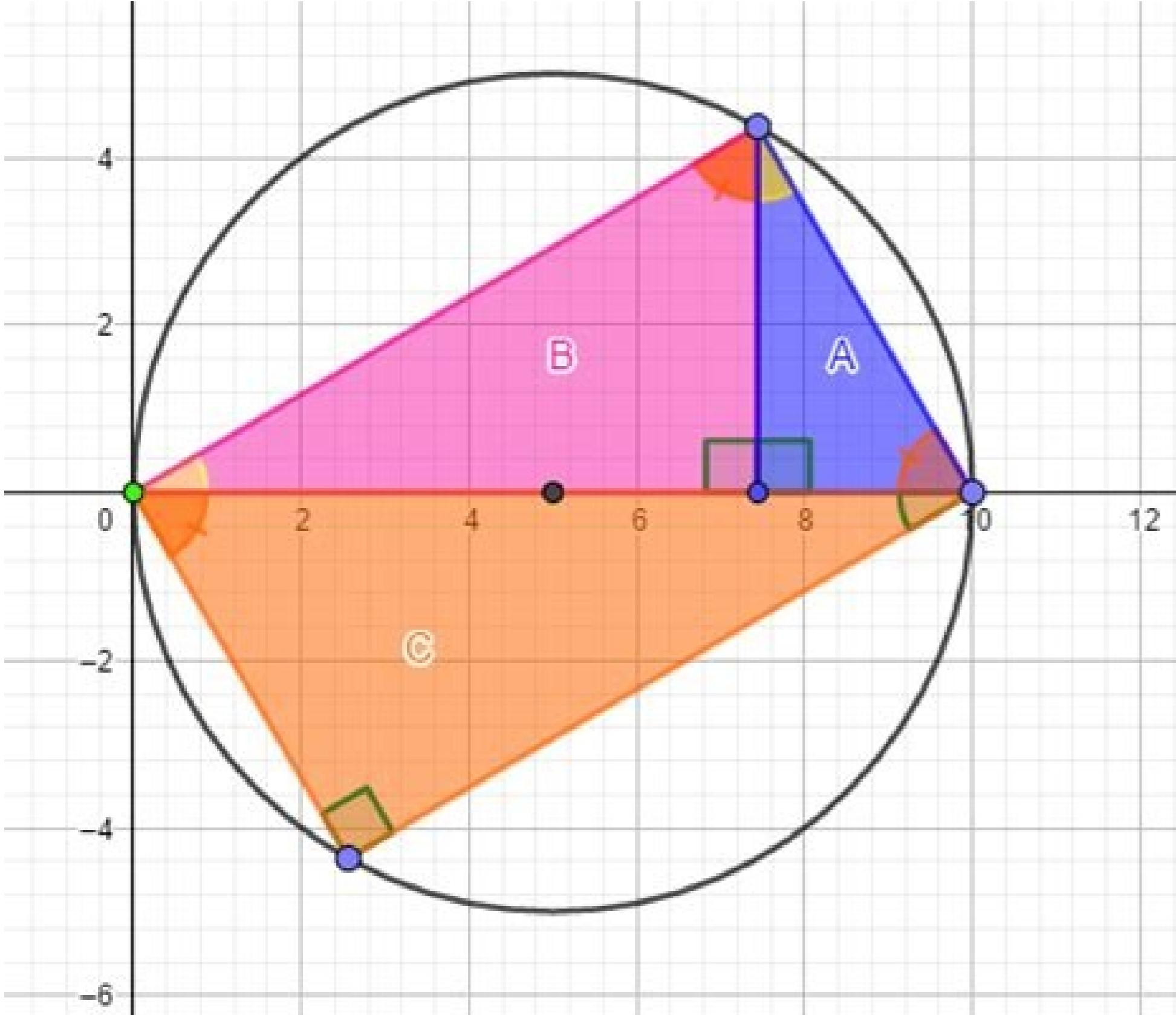


### PYTHAGORAS' THEOREM QUESTIONS 1

Find the length of the **hypotenuse** of each of the triangles. Give any decimal answers to 2dp.



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1. a.  $11a^4b^3$       b.  $311+2x^3$       c.  $\frac{y^5}{4z^2}$

2. a.  $\left\{ x \mid x \text{ is a real number and } x \leq \frac{2}{3} \right\}$  or  $\left( -\infty, \frac{2}{3} \right]$   
 b.  $\{x \mid x \text{ is a real number}\}$  or  $(-\infty, \infty)$   
 c.  $\{x \mid x \text{ is a real number and } x \geq 0\}$  or  $[0, \infty)$

3. a.  $-x\sqrt[3]{9x^2} + 3x\sqrt[3]{3x}$       b.  $10x^2\sqrt{x} - 2x\sqrt{2x}$

4. a.  $6x - 6\sqrt{x} - 12$       b.  $a - 4\sqrt{ab} + 4b$       c.  $2x + 3\sqrt[3]{4x} - \sqrt[3]{2x^2} - 3$

5. a.  $\frac{\sqrt[3]{2x^2}}{x}$       b.  $\frac{5\sqrt[3]{4y^2z}}{2z}$

6. a.  $\frac{2x-9}{x\sqrt{2}-3\sqrt{x}-4\sqrt{2x}+12}$       b.  $\frac{x+4\sqrt{x}-12}{36-x}$

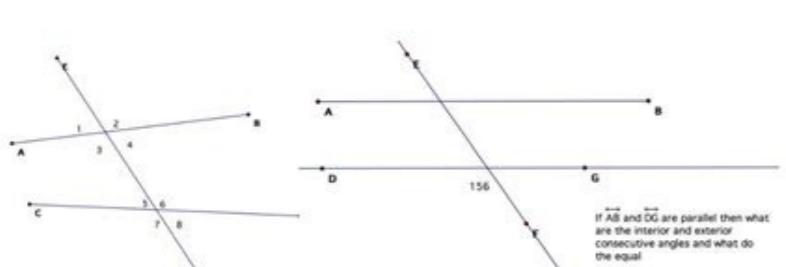
7. a. EXACT:  $\sqrt{23.29}$       b. APPROXIMATION: 4.826

8. a.  $\{5\}$  or  $x=5$       b.  $\{\}$  or no solution  $\left[ x = -\frac{7}{3} \text{ extraneous} \right]$

9. a.  $\{3.64\}$  or  $x \approx 3.64$       b.  $\{\}$  or no solution  $\left[ x = \frac{49}{16} \text{ extraneous} \right]$

10. The volume of the cylinder is 72.38 cubic feet ( $\text{ft}^3$ ).

### Examples



Name all consecutive angle pairs

Hi, guys, if you know the lengths of the other two sides of a right triangle, our Pitagoras theorem calculator will determine any length of the missing sides. Calculation of hypotenuse is part of it. The longest side of a right triangle is the hypotenuse, which is the opposite side to the angle of 90 degrees. The hypotenuse formula, we can use it to get this side by solving the hypotenuse. Remember that a right triangle is the one with a 90 degree angle. As the value of the angles of any added triangle should be 180 degrees, the other two angles should also total 90 degrees. Make sure to see other related calculators on our site, such as 45 45 90 Triangle, or 30 60 90 Triangle Calculator. What is the Pitagoras theorem - definition? The pythagorean theorem declares and describes how the three sides of a right triangle are related. Pythagoras defined the square of the hypotenuse (opposite length of the angle of 90 degrees) as the sum of the squares of the other two sides of that triangle. Let's look at it, its derivations, equations and some resolved instances. If a triangle is 90 degrees, the square of the hypotenuse is equal to the sum of the squares of the other two sides. Consider the ABC triangle, in which: the hypotenuse is BC, the base is AB and the altitude (height) is ac. It is worth noting that hypotenuse is the longest side of a triangle. Our calculator will provide all necessary information and data. The history of the Pitagoras theorem, so that the Pitagoras theorem was one of the first theories known by ancient societies. Pythagoras, a Greek mathematician and philosopher is his founder. In Cortona, a Greek maritime port in southern Italy, Pythagoras founded the School of Pythagorean Mathematics. Many of his contributions to mathematics are attributed to him. However, some of them have been the work of their students. Although Pythagoras has popularized evidence to suggest that the square root of 2 is irrational and can not be declared as a proposal of two. They were inflexible that any two lengths were full full length as the XX and XVI BC. According to legend, Pitágoras was so happy when he discovered the theory that he sacrificed an ox. However, his pit and his successors were deeply upset by the subsequent revelation that the square root of 2 is irrational and can not be declared as a proposal of two. They were inflexible that any two lengths were full full length as the XX and XVI BC. There were several efforts to hide that the square root of 2 is irrational. The individual who revealed knowledge is alleged to have perished in the sea. PITÁGORAS' THEOREM FAN. We can use the hypotenuse formula to describe the Pitágoras theorem. If the hypotenuse is c and the sides of a right triangle are a and b, the equation is: perhaps our trâ or calculator can help you learn more, or some which can be solved by bisecting triangles along with one of the diagonals of the triangle, as shown in the diagram of the square of the hypotenuse. The trapezoid area can be estimated as half of the square of the hypotenuse:  $\frac{1}{2}c^2$ . The area of a trion is half of the area of any parallelogram with the same base and height. It uses a trapezoid instead of a rectangle, which is the case with the Pythagorean triplets. The Pythagorean triplets are a collection of three positive integers a, b and c, such that  $a^2 + b^2 = c^2$ , and A, B, C and C are all positive integers. Then the largest side of the trityped o or more odd numbers  $a^2 + b^2 = c^2$  always  $c > a & b$ . The most well-known Pythagorean triple example is (3, 4, 5). The set of Pythagorean triples is infinite. The first Pythagorean Triples are (3, 4, 5), (5, 12, 13), (7, 24, 25), (9, 40, 41), (11, 60, 61), (13, 84, 85), (15, 112, 113), (17, 144, 145), (19, 180, 181), (21, 220, 221), (23, 264, 265), (25, 300, 301), (27, 360, 361), (29, 420, 421), (31, 480, 481), (33, 540, 541), (35, 600, 601), (37, 660, 661), (39, 720, 721), (41, 780, 781), (43, 840, 841), (45, 900, 901), (47, 960, 961), (49, 1020, 1021), (51, 1080, 1081), (53, 1140, 1141), (55, 1200, 1201), (57, 1260, 1261), (59, 1320, 1321), (61, 1380, 1381), (63, 1440, 1441), (65, 1500, 1501), (67, 1560, 1561), (69, 1620, 1621), (71, 1680, 1681), (73, 1740, 1741), (75, 1800, 1801), (77, 1860, 1861), (79, 1920, 1921), (81, 1980, 1981), (83, 2040, 2041), (85, 2100, 2101), (87, 2160, 2161), (89, 2220, 2221), (91, 2280, 2281), (93, 2340, 2341), (95, 2400, 2401), (97, 2460, 2461), (99, 2520, 2521), (101, 2580, 2581), (103, 2640, 2641), (105, 2700, 2701), (107, 2760, 2761), (109, 2820, 2821), (111, 2880, 2881), (113, 2940, 2941), (115, 3000, 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