

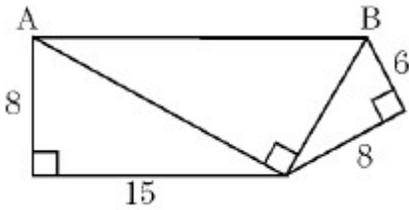
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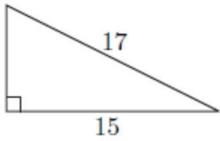
Assignment Pythagorean Theorem and Triples

1. Dave drove 25km North, 1 km West, 15 km South and 8 km east. How far is he from his starting point?

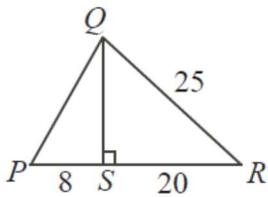
2. Find the length of segment AB in the diagram:



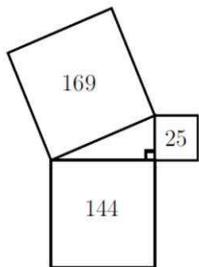
3. In the right-angled triangle below, the hypotenuse has length 17 units and one of the legs has length 15 units. How many units² are in the area of the triangle?



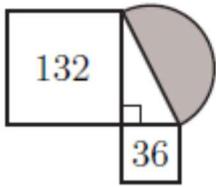
4. In the diagram, what is the perimeter of $\triangle PQR$?



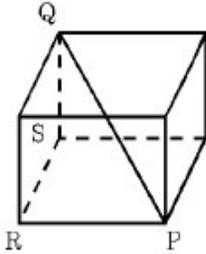
5. Given the areas of the three squares in the figure, what is the area of the interior triangle?



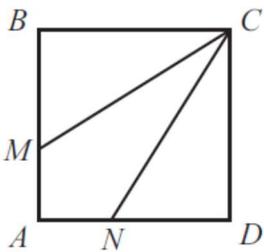
6. Squares are erected on the legs of a right-angled triangle. These squares have areas 36 and 132 as shown. A semicircle (Shaded) is drawn with hypotenuse as diameter. What is the area of the semi-circle? Give your answer in terms of pi.



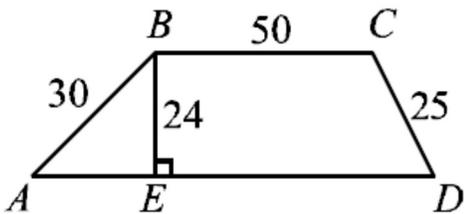
7. Given that $RS = 4\text{cm}$, $PR = 7\text{cm}$, and $QS = 5\text{cm}$, what is the length of QP ?



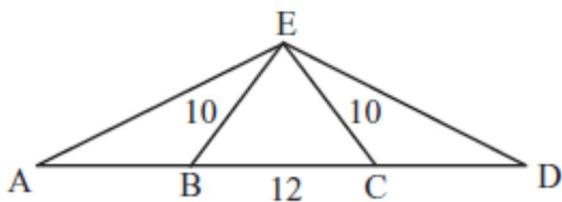
8. Square $ABCD$ has sides of length 3. Segments CM and CN divide the squares area into three equal part. How long is segment CM ?



9. What is the perimeter of trapezoid $ABCD$?

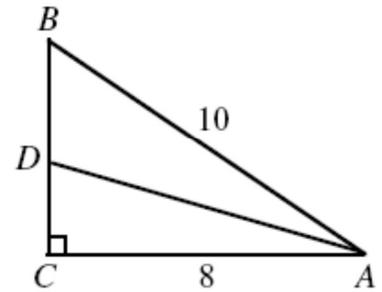


10. Points $A, B, C,$ and D lie on a line, in that order, with $AB=CD$ and $BC=12$. Point E is not on the line, and $BE=CE=10$. The perimeter of $\triangle AED$ is twice the perimeter of $\triangle BEC$. Find AB .



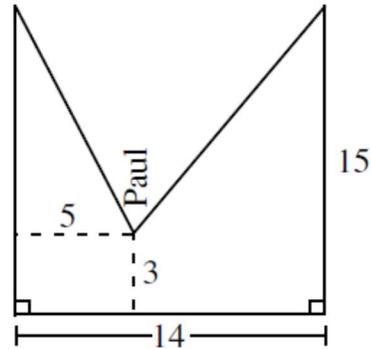
Triangle ABC is right-angled with $AB = 10$ and $AC = 8$. If $BC = 3DC$, then AD equals

- (A) 9 (B) $\sqrt{65}$ (C) $\sqrt{80}$
 (D) $\sqrt{73}$ (E) $\sqrt{68}$



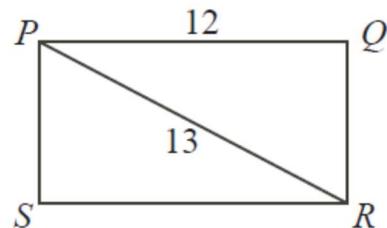
A “slackrope walker” is much like a tightrope walker except that the rope on which he performs is not pulled tight. Paul, a slackrope walker, has a rope tied to two 15 m high poles which are 14 m apart. When he is standing on the rope 5 m away from one of the poles, he is 3 m above the ground. How long is the rope?

- (A) 28 m (B) 30 m (C) 27 m
 (D) 26 m (E) 29 m



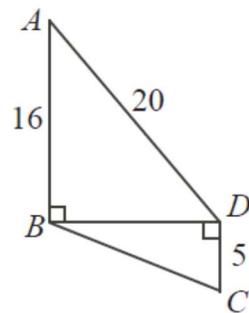
In rectangle $PQRS$, $PQ = 12$ and $PR = 13$. The area of rectangle $PQRS$ is

- (A) 30 (B) 60 (C) 36
 (D) 78 (E) 72



In the diagram, what is the length of BC ?

- (A) 13 (B) 12 (C) 20
 (D) 16 (E) 17



Pythagorean Triples are right triangles that have whole number sides. The most famous Pythagorean triple is the 3-4-5 triangle, since $3^2 + 4^2 = 5^2$.

List as many Pythagorean Triples as you can with sides under 100: (you can google if you get stuck)

a	b	c	Check: $a^2 + b^2 = c^2$?

Prove that if one leg of a right triangle and the hypotenuse are consecutive values, then the other leg must be an odd number.