

Due date: Sun May 19 10:00:00 pm 2019 (EDT)

Did you manage to log in?

A. Yes, I did.

Tries 0/20

Let's test your calculator skills. What is 7.29^2 ?

Tries 0/20

What is 7.29^3 ?

Tries 0/20

And what is $7.29^{7/5}$?

Tries 0/20

What is the square root of 10^{17} ?

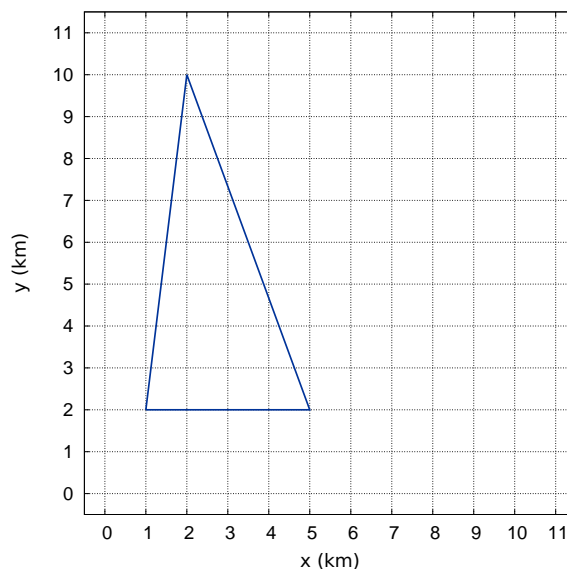
(Hints: 10 is an integer number. Integer numbers are exact, they don't have any uncertainty. The result however is going to be a real number. Computers approximate real numbers using floating point numbers. Floating point numbers have a given number of significant figures or digits. LON-CAPA typically expects 3, 4 or 5 digits. 2 or 1 is not enough, 6 or more is too many. Very large or very small numbers are expressed in scientific or exponential notation like the number above. Numbers in scientific notation are entered to computer software - like LON-CAPA - as 1.23E15 or 1.23e15, for example; and 1.23E-15 or 1.23e-15, if the exponent is negative. If both the number and the exponent are negative, then you type -1.23E-15 or -1.23e-15. On calculators the button is usually labelled as 'EE', but 'E' or 'EEX' or 'Exp' are also possible.)

Tries 0/20

What is the area of a rectangle with a length of 17.1 cm and a width of 76.9 mm?

Tries 0/20

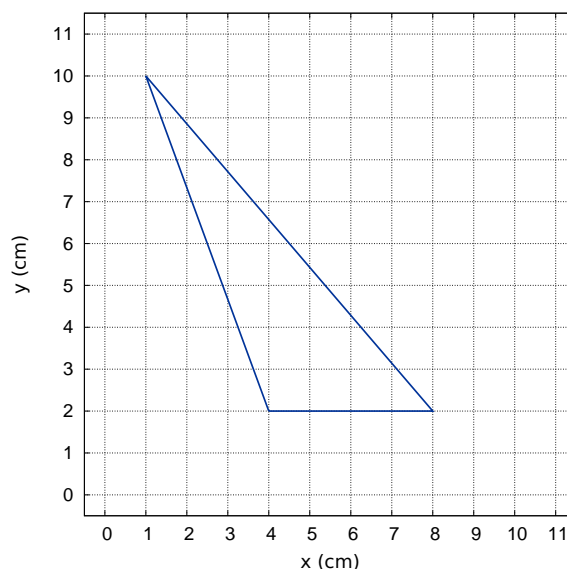
Consider the triangle shown in the figure.



What is the area of the triangle?

Tries 0/20

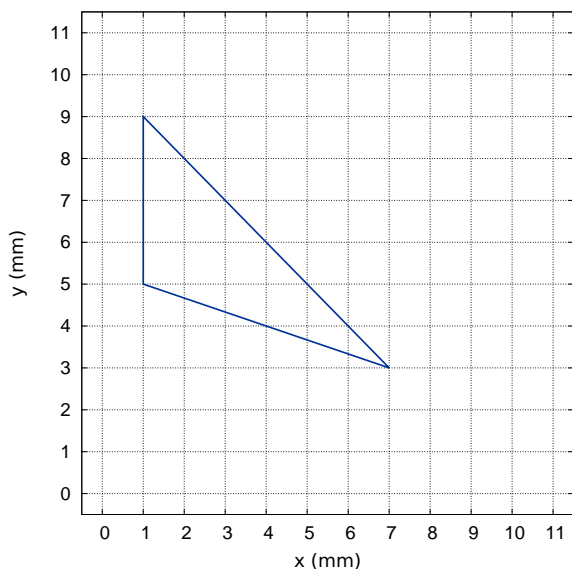
Consider the triangle shown in the figure.



What is the area of the triangle?

Tries 0/20

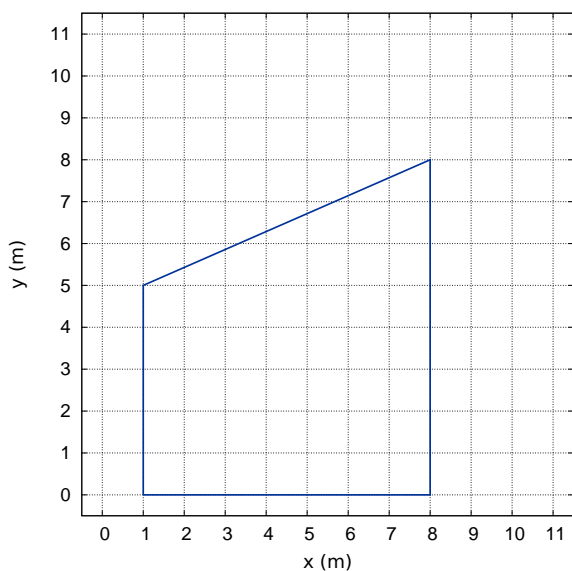
Consider the triangle shown in the figure.



What is the area of the triangle?

Tries 0/20

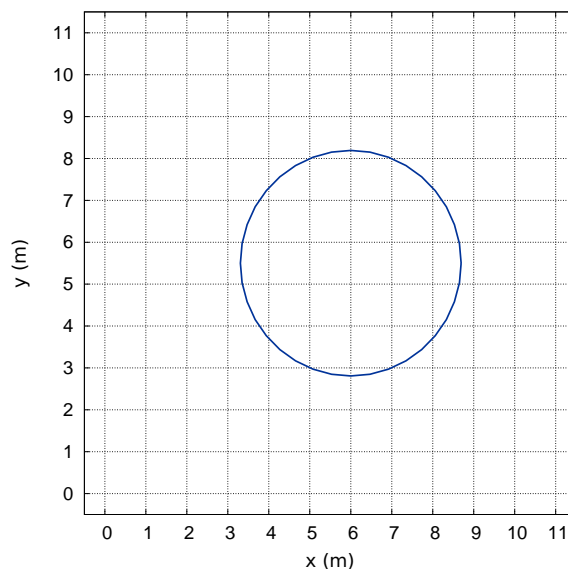
Consider the trapezoid shown in the figure.



What is the area of this trapezoid?

Tries 0/20

Consider the circle shown in the figure.



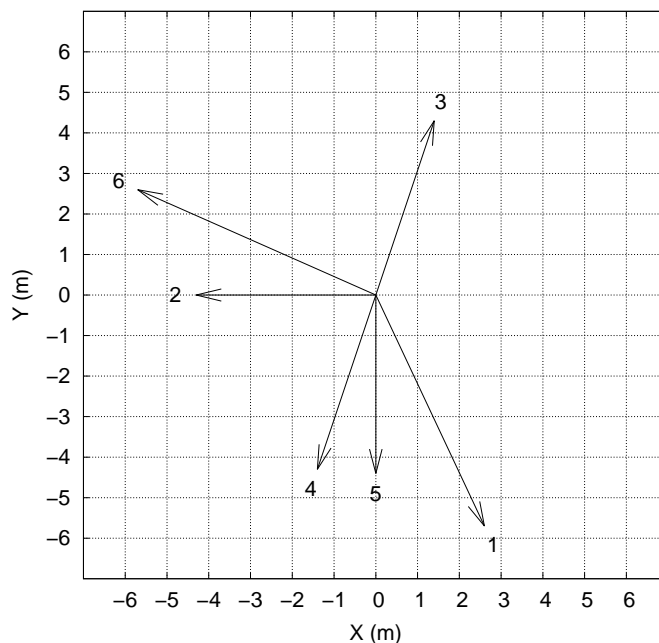
What is the diameter of the circle? Please, notice that the circle passes through a number of grid intersection points.

Tries 0/20

What is the area of the circle?

Tries 0/20

Several vectors in the x - y plane are shown in the figure with their tails at the origin of the coordinate system and with a label at their heads. Two of these vectors are given in terms of the unit-vectors \mathbf{i} and \mathbf{j} as $\mathbf{P} = (1.40\mathbf{i} + 4.30\mathbf{j})$ and $\mathbf{Q} = (-5.70\mathbf{i} + 2.60\mathbf{j})$, where the numbers are measured in meters.



Identify vectors **P** and **Q** in the figure.

Choices: **1, 2, 3, 4, 5, 6.**

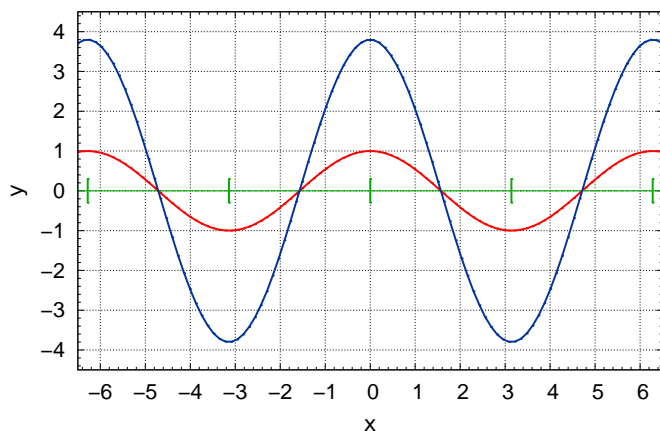
- The label of vector **Q** on the figure is ...
- The label of vector **P** on the figure is ...

Tries 0/20

Let $\mathbf{M} = (\mathbf{P} + \mathbf{Q})$. Calculate the magnitude of the vector **M**.

Tries 0/20

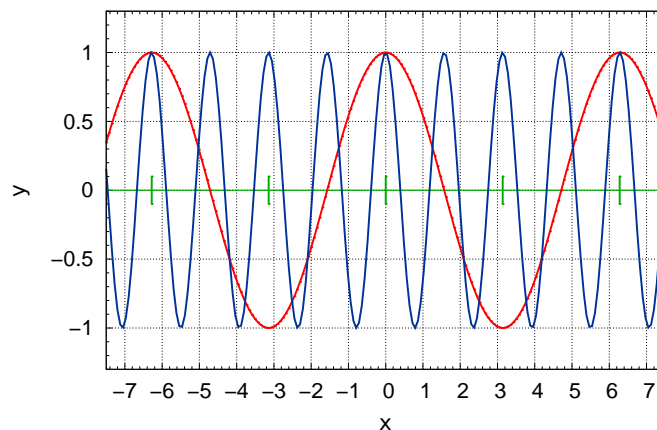
Consider the $f(x) = A\cos(x)$ function shown in the figure in blue color. What is the value of amplitude A for this function?



As a reference the $g(x) = \cos(x)$ function is shown in red color, and green tick marks are drawn at integer multiples of π .

Tries 0/20

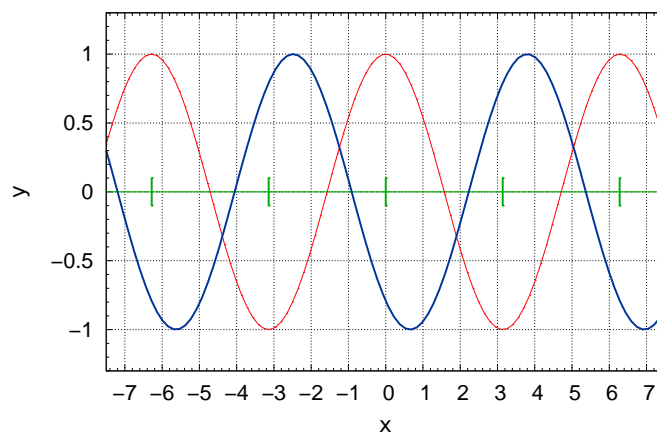
Consider the $f(x) = \cos(Bx)$ function shown in the figure in blue color. What is the value of parameter B for this function? This parameter is called angular frequency in physics and it is denoted by ω .



As a reference the $g(x) = \cos(x)$ function is shown in red color, and green tick marks are drawn at integer multiples of π .

Tries 0/20

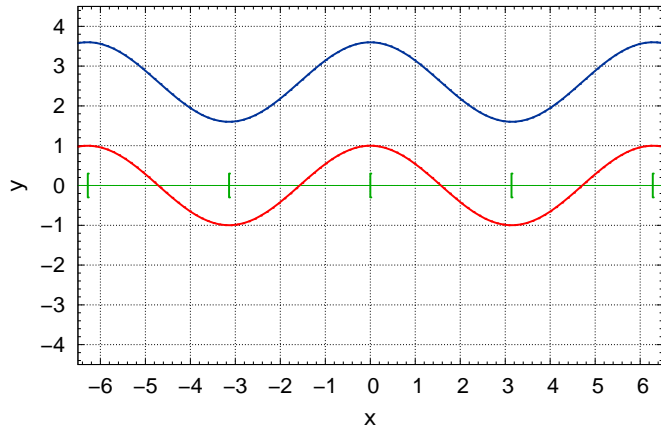
Consider the $f(x) = \cos(x-C)$ function shown in the figure in blue color, where $0 \leq C \leq 2\pi$. What is the value of parameter C for the function in the figure?



As a reference the $g(x) = \cos(x)$ function is shown in red color, and green tick marks are drawn at integer multiples of π .

Tries 0/20

Consider the $f(x) = \cos(x) + D$ function shown in the figure in blue color. What is the value of parameter D ?



As a reference the $g(x) = \cos(x)$ function is shown in red color, and green tick marks are drawn at integer multiples of π .

Tries 0/20