

# ENTRANCE EXAMINATION 11 grades

\* Obligatorii

1

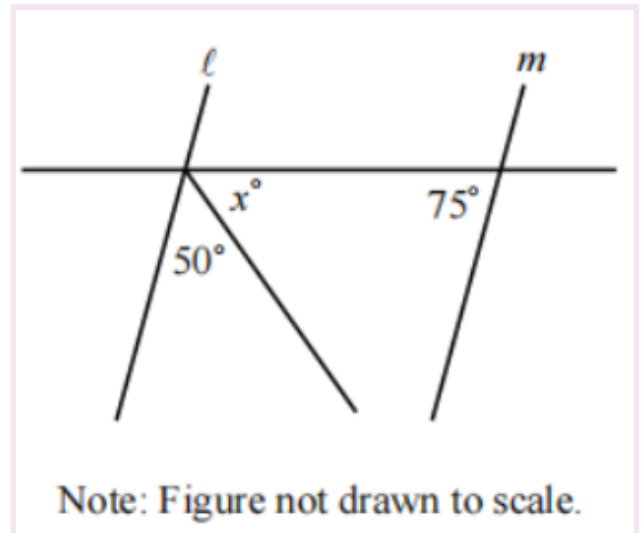
Which of the following is equal to :  
(1 punct)

$$a^{-\frac{3}{2}} \times \sqrt[3]{a^2}$$

- $-a\sqrt{a}$
- $\frac{1}{a\sqrt{a}}$
- $\frac{\sqrt{2}}{a^{\frac{3}{2}}}$
- $\frac{1}{a^{\frac{5}{6}}}$

2

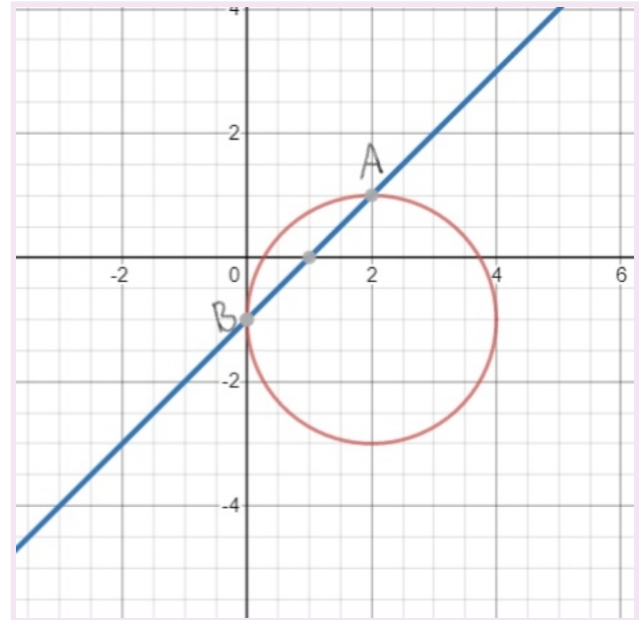
In the next figure,  $l$  is parallel with  $m$ .  
What is the value of  $x$ ? \*  
(1 punct)



- 45
- 50
- 55
- 60

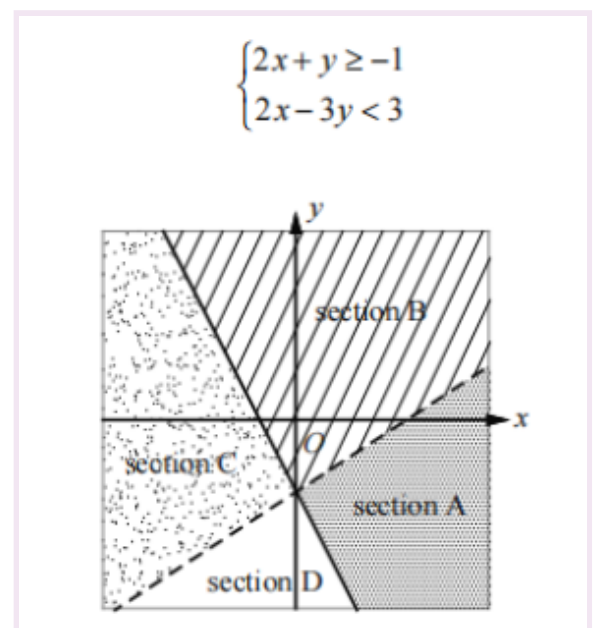
3

- a) Write the equation represents the equation of the circle shown in the xy-plane ?
- b) Find the length of the circle.
- c) What percentage is the length of the arc AB from the length of the circle? \*  
(3 puncte)



4

- A system of inequalities and a graph are shown on the right.  
Which section or sections of the graph could represent all of the solutions to the system ? \*  
(1 punct)



5

Find the intersection between the circle and the line of equations: \*  
(1 punct)

$$x^2 + y^2 = 5 \text{ and } y = x - 3$$

6

Students at a certain school got the following results on the test: 10, 10,10, 15,12, 20, 21.

Find the average, mode and median in this order. \*  
(1 punct)

7

Which of the following is the equation of the line that passes through point (4, -1) and has slope -2 ? \*

(1 punct)

$x + 2y = 2$

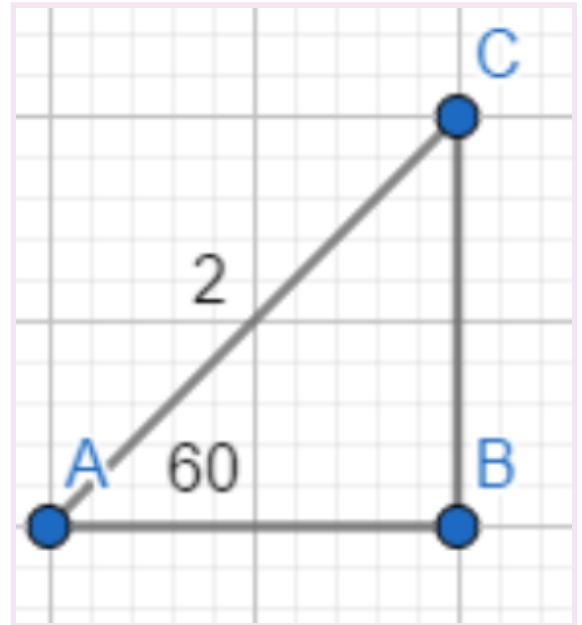
$x - 2y = 6$

$2x - y = 9$

$2x + y = 7$

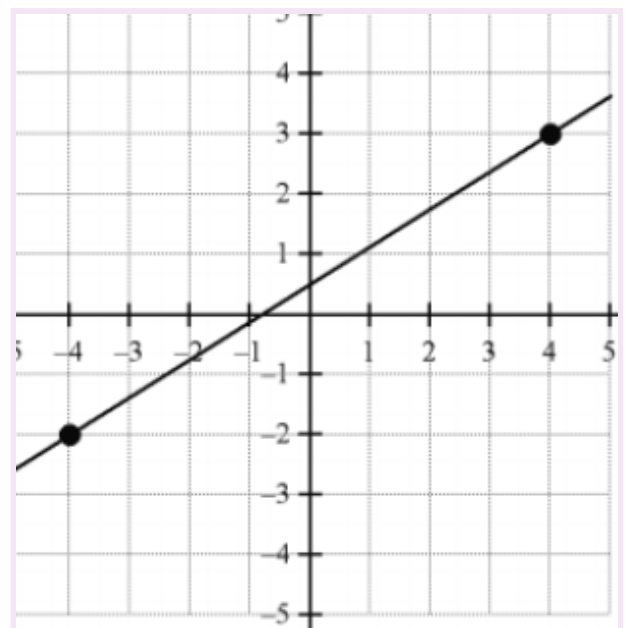
8

Given the triangle ABC, with angle  $CAB=60$  degrees and side  $AC=2$ cm.  
Find the length of AB and BC. \*  
(2 puncte)



9

Find the equation of the line in the next figure. \*  
(1 punct)

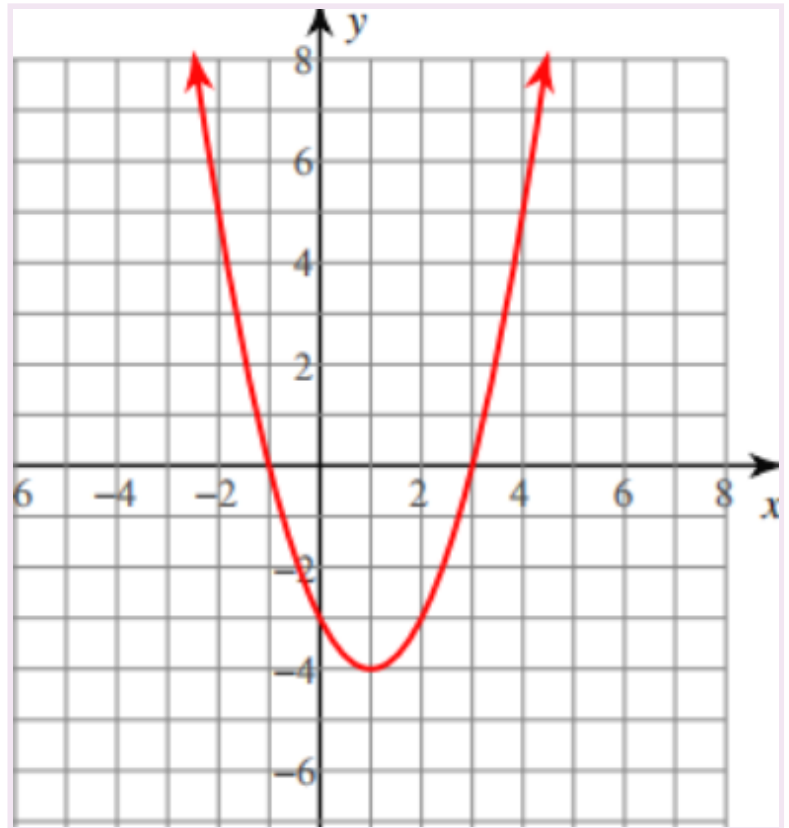


Find :

a) the y-intercept

b) equation for quadratic function associated with the adjacent graph. \*

(2 puncte)

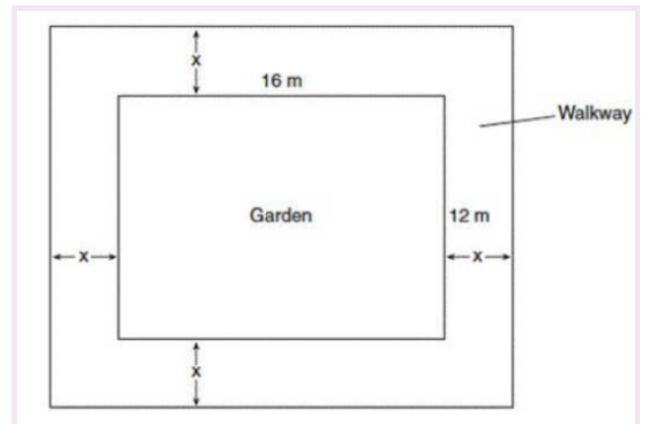


11

A rectangular garden measuring 12 meters by 16 meters is to have a walkway installed around it with a width of  $x$  meters, as shown in the diagram below. Together, the walkway and the garden have an area of 396 square meters.

State the width of the walkway, in meters. \*

(1 punct)



12

The temperature increased from 40 F to 70 F. What is the percent increase in temperature ? \*

(1 punct)

13

A football is punted into the air. Its height  $h$ , in metres, after  $t$  seconds is given by the equation below.

a) How high is the ball after 1 second?

b) Find the maximum height of the ball to one decimal place. \*

(1 punct)

$$h(x) = -2x^2 + 3x + 1$$

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