

Name:

Class/Group:.....

Part I

1. Find the value of $25 - 3x$ if $x = -2$

Answer: _____

(1/0/0)

2. What number must be in the box in order for the equality to hold?

$$\frac{2}{3} + \boxed{} + \frac{1}{9} = 1$$

Answer: _____

(1/0/0)

3. Adam buys a used moped.
The formula $y = 10000 \cdot 0.8^x$ describes the value of moped y kronor x years later.
Find the yearly percentage decrease in value.

Answer: _____ % per year

(2/0/0)

4. Solve the equation $9x + 10^2 = 10^3$

Answer: $x =$ _____

(0/1/0)

5. $x + y = a$ and $x - y = b$

Write an expression for $a - b$ and simplify it.

Answer: _____

(1/1/0)

6. If Hanna earned 2 000 kr more per month, her monthly wage would be one and a half times as much as Nora's.

Write an expression for Hanna's monthly wage if Nora's monthly wage is x kr.

Answer: _____ (0/1/0)

7. Solve the equation: $x^{\frac{1}{2}} = 9$

Answer: $x =$ _____ (0/1/0)

8. Find the coordinates for the vector $\overrightarrow{PQ}$ if $P = (2, 2)$ and $Q = (2, 0)$.

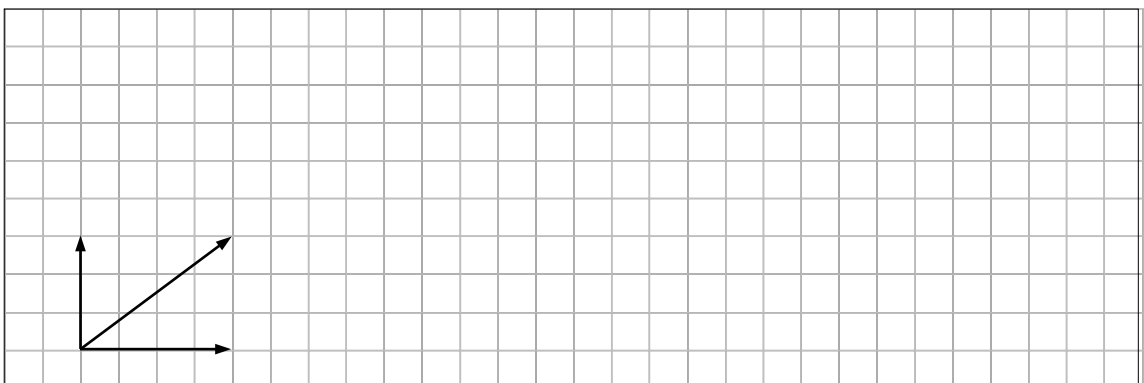
Answer: _____ (0/1/0)

9. If $x \geq 2$ and $y \geq -3$, what is the least possible value that the expression $2x + y^2$ can have?

Answer: _____ (0/0/2)

10. The three vectors in the figure has the absolute value 3, 4 and 5 respectively. Determine the length (absolute value) of the three vectors resultant. Show your solution and explain your thinking in the figure and/or the box.

(1/1/1)



11. Calculate:

$$\frac{10^{102} + 10^{100}}{10^{100}}$$

Answer: _____

(0/1/1)

12. Circle the correct alternative. Explain your reasoning in the box below.

The value of $2x + 3$ is the value of $x + 2$

always less than

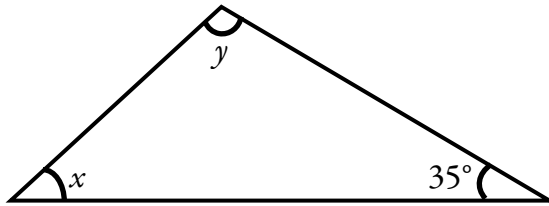
always equal to

always greater than

for some x-values greater than

(0/1/1)

13. In a triangle, the angles are given as shown.



- a) Write y as a function of x .

Answer: _____ (0/1/0)

- b) Find the range for the function.

Answer: _____ (0/0/2)