

Exercises: Sample of the OMPT-A Mock Exam

Question 1

Calculate $\frac{4}{5} + \frac{5}{8} + \frac{2}{7}$ and simplify the answer as much as possible.

$$\frac{4}{5} + \frac{5}{8} + \frac{2}{7} = \dots\dots\dots$$

Question 2

Decompose $\frac{5 \cdot v^2 + 7 \cdot u}{54 \cdot u \cdot v}$ in fractions with only one term in the numerator. Simplify your answer as much as possible.

$$\frac{5 \cdot v^2 + 7 \cdot u}{54 \cdot u \cdot v} = \dots\dots\dots$$

Question 3

Solve the equation $-9 + 7 \cdot x = 4 + 7 \cdot x$.

- If the equation has one solution, write $x = a$ with the correct value of a .
- If the equation has no solution, write “none”.
- If each value of x is a solution, write “all”.

.....

Question 4

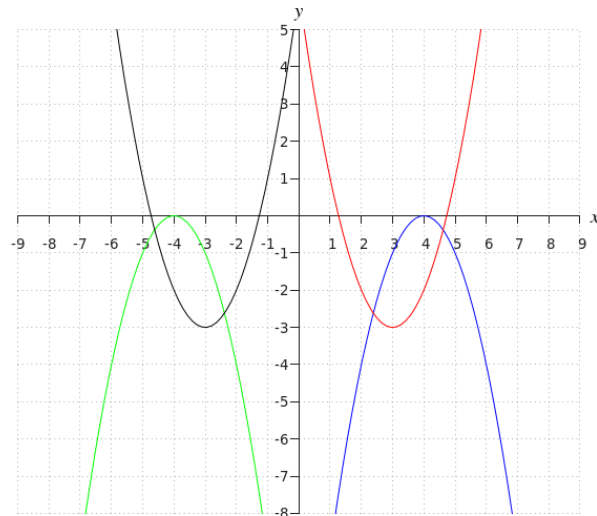
Solve the following system of equations.

$$\begin{cases} -6 \cdot x - 9 \cdot y = -7 \\ x - 4 \cdot y = -5 \end{cases}$$

... ..

Question 5

There are four graphs shown in the figure below, in four different colors: blue, green, red, and black.



Determine which formula belongs to which graph.

- a. $y = -(x - 4)^2$
- b. $y = x^2 - 6 \cdot x + 6$
- c. $y = -(x + 4)^2$
- d. $y = x^2 + 6 \cdot x + 6$

Blue graph
Green graph
Red graph
Black graph

Question 6

What is the range of $f(x) = 2 \cdot x^2 - 7$?

- a. All numbers
- b. $(-\infty, -7]$
- c. $[0, \infty)$
- d. $[-7, \infty)$
- e. $(-\infty, 0]$

Question 7

Solve the equation for x :

$$4 + 6^{2x+3} = 14$$

Give an exact answer in the form $x = \dots$

... ..

Question 8

Calculate the derivative $f'(x)$ of the function $f(x) = \sqrt{7} \cdot x^4 + 7 \cdot \sqrt{x}$.

$f'(x) = \dots\dots\dots$