



The Quadratic Formula Exam Practice

Q1. Solve the equation $x^2 + 3x - 15 = 0$, giving your answers to 1 decimal place.

Answer: _____
(3 marks)

Q2. Solve the equation $2x^2 - 11x + 24 = 0$, giving your answers to 1 decimal place.

Answer: _____
(3 marks)



Q3. Solve the equation $3a^2 - 2a - 32 = 0$, giving your answers to 2 decimal places.

Answer: _____
(3 marks)

Q4. Solve the equation $14c^2 - 160 = 0$, giving your answers to 2 decimal places.

Answer: _____
(3 marks)



Q5. Solve the following equation correct to 3 decimal places:

$$6x^2 = 4 - 13x$$

Answer: _____
(3 marks)

Q6. Solve the following equation correct to 1 decimal place:

$$y^2 - 24y = 3y^2 - 38$$

Answer: _____
(3 marks)



Q7. Solve the equation below, giving your answers in the form $a \pm \sqrt{b}$ where a and b are whole numbers:

$$a^2 = -6a + 52$$

Answer: _____
(3 marks)

Q8. Show that the equation $2x = 23 - \frac{44}{x}$ can be written in the form:

a) $2x^2 - 23x + 44 = 0$

Answer: _____
(2 marks)

b) Hence solve the equation: $2x = 23 - \frac{44}{x}$, giving your answers to 1 significant figure.

Answer: _____
(2 marks)



Q9. Solve the equation $10x^3 + 5x^2 + 4x = 0$, giving your answers to 1 decimal place.

Answer: _____
(3 marks)

Applied Mixed Practice Problems

Q10. The sum of a number and its reciprocal is $\frac{31}{4}$.

a) Show that $4x^2 - 31x + 4 = 0$.

Answer: _____
(2 marks)

b) Find the possible values of x correct to 2 significant figures.

Answer: _____
(3 marks)



Q11. A mini - computer can sort a list of n numbers in order of size in T milliseconds according to the following rule:

$$T = 0.000380n^2 + 0.00145n - 6.15$$

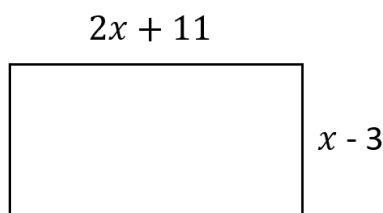
a) How long, in seconds, does it take the computer to sort 10,000 numbers?

Answer: _____
(2 marks)

b) How many numbers can the computer sort in 1 second?

Answer: _____
(2 marks)

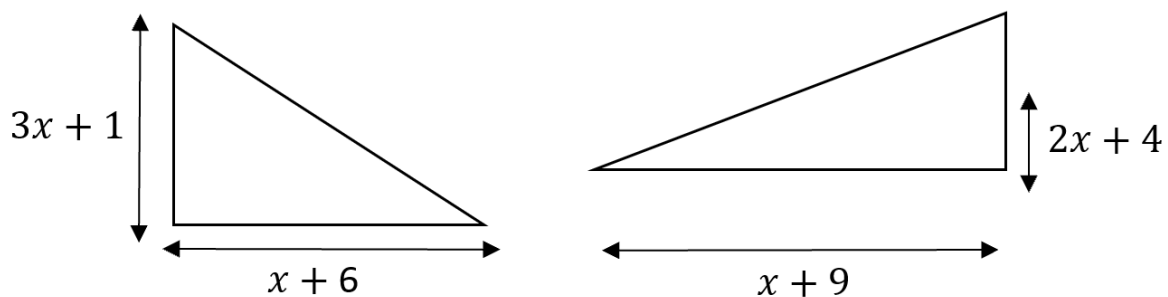
Q12. The area of the rectangle below is 88 cm^2 . By finding and solving a suitable quadratic equation, work out the value of x to 1 decimal place.



Answer: _____
(4 marks)



Q13. The area of the two right-angled triangles below are the same.
Find this area, correct to 2 decimal places.



Answer: _____

(5 marks)



Q14. Using algebra, find the points of intersection of the line $y = 7x - 3$ and the curve $y = 2x^2 - 5x + 11$ correct to 1 decimal place.

Answer: _____

(5 marks)