



Your way to an easy A

2026 WA1 Paper
Compassvale Secondary School
Additional Mathematics
Secondary 3

Duration: 30min

Total	/20
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1. (a) Express $x^2 + 12x - 10$ in the form $(x + h)^2 + k$, where h and k are real numbers.

Ans: _____ [1]

- (b) Hence, find the minimum value of $x^2 + 12x - 10$ and the corresponding value of x .

Ans: _____ [2]

- (c) Another quadratic graph has equation $y = (x - 5)^2 - 50$. Using your answer in part (b), explain why $y = -(x - 5)^2 - 50$ will not intersect with $y = x^2 + 12x - 10$.

[2]

2. Given that $f(x) = -6x + 23$ and $p(x) = x^2 - 4$.
(a) Calculate the value of $2f(5) \times p(-9)$.

Ans: _____ [1]

- (b) The line $y = -6x + 23$ and the curve $y = x^2 - 4$ intersect at the points P and Q. Find the coordinates of P and Q.

Ans: _____ [5]

3. Find the set of values of the constant k for which the quadratic equation $y = (k + 1)x^2 - 6x + 4$ is always positive for all real values of x .

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Ans: _____ [3]

4. The equation of a curve is $y = px^2 - 3x - p$, where p is a constant, and the equation of a line is $y = 8x - 5$. Show that, for all values of p , the line intersects the curve at two distinct points.

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Ans: _____ [6]

End of Paper

Solutions

1. (a) $(x + 6)^2 - 46$
(b) $x = -6, y = -46$

2. (a) -1078
(b) P(-9,77) and Q(3,5)

3. $k > \frac{5}{4}$

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