MEMORANDUM

Name: ..... Class: .....

Date: .....

MARK ____ / 18

Answer all questions. Show all your working — marks are awarded for method as well as the final answer. **Teacher copy: accept any correct equivalent method.**

1 Solve $x^2 - x - 6 > 0$ (3)

$(x-3)(x+2) > 0 \rightarrow x < -2$ **or** $x > 3$ ✓✓✓ (3)

2 Solve $x^2 - x - 6 \leq 0$ (3)

$-2 \leq x \leq 3$, i.e. $[-2\ ;\ 3]$ ✓✓✓ (3)

3 Solve $x^2 - 9 < 0$ (2)

$-3 < x < 3$ ✓✓ (2)

4 Solve $x^2 - 4 \geq 0$ (2)

$x \leq -2$ **or** $x \geq 2$ ✓✓ (2)

5 Solve $x^2 + 5x + 6 < 0$ (3)

$(x+2)(x+3) < 0 \rightarrow -3 < x < -2$ ✓✓✓ (3)

6 Solve $x^2 - 5x > 0$ (2)

$x(x-5) > 0 \rightarrow x < 0$ **or** $x > 5$ ✓✓ (2)

7 Solve $-x^2 + 4 > 0$ (2)

$-2 < x < 2$ ✓✓ (2)

8 Write $x < -1$ or $x > 4$ in interval notation. (1)

$(-\infty\ ;\ -1) \cup (4\ ;\ \infty)$ ✓ (1)

TOTAL: 18 marks

© Danemathics — free to print and share for classroom use.