

Linear and Quadratic Equations – Section Test

1) Solve $3x + 2 = x - 5$.

2) Solve $1 - x = 5x - 3$.

Give your answer in its simplest form as a fraction $\frac{a}{b}$ where a and b are integers.

3) Solve $1 - 2(y + 3) = 5(2 - y)$.

4) Solve $\frac{a-2}{3} = \frac{1-a}{2}$.

Give your answer as an exact decimal.

- 5) A football club has played 15 matches so far this season. They score 3 points for a win, 1 point for a draw and 0 points for a loss. They have lost 4 matches, and their points score is 27. How many matches have they won?

6) What are the solutions of the equation $x^2 + 2x - 5 = 0$?

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|---------------------------------|------------------------|
| (a) There are no real solutions | (b) $-1 \pm \sqrt{6}$ |
| (c) $-1 \pm \sqrt{12}$ | (d) $-1 \pm \sqrt{24}$ |

7) What are the solutions of the equation $2x^2 - 11x + 15 = 0$?
Give your answers to 1.d.p. where applicable.

8) What are the solutions of the equation $3x^2 - 2x + 4 = 0$?

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|---------------------------------|---------------------------------|
| (a) no real solutions | (b) 2 and $\frac{2}{3}$ |
| (c) $\frac{1 \pm \sqrt{13}}{3}$ | (d) $\frac{1 \pm \sqrt{11}}{3}$ |

9) What are the solutions of the equation $2x^2 + 5x - 4 = 0$?

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|----------------------------------|---------------------------------|
| (a) $\frac{5 \pm \sqrt{57}}{4}$ | (b) $\frac{5 \pm \sqrt{7}}{4}$ |
| (c) $\frac{-5 \pm \sqrt{57}}{4}$ | (d) $\frac{-5 \pm \sqrt{7}}{4}$ |

- 10) A rectangle has length $(3x - 1)$ cm and width $(x + 3)$ cm. The area of the rectangle is 65 cm². What is the value of x ?
Give your answer as a decimal to 2.d.p.