Unicorn Race: Quadratics Practice Test

Time: 40 min Total: 23 marks Two-sided: questions continue on the back

QUAD-P1

NAME or INITIALS (BLOCK CAPITALS, one letter per box)

ANSWERS — write each final answer in its box. Only these boxes are marked.

1		**2**		**3**	
4		**5**		**6**	
7		**8**		**9**	
10		**11**		**12**	

1 Factorise: **1 mark**

$$x^2 + 7x + 12$$

answer in box 1 on the front

2 Factorise: **1 mark**

$$x^2 - 5x - 14$$

answer in box 2 on the front

3 Factorise fully: **2 marks**

$$3x^2 - 12$$

answer in box 3 on the front

4 Factorise: **2 marks**

$$2x^2 + 5x - 3$$

answer in box 4 on the front

5 Solve: **2 marks**

$$x^2 - 6x + 8 = 0$$

answer in box 5 on the front

Questions continue on the back. Only the answer boxes above are marked.

6 Solve: **2 marks**

$$2x^2 + x - 6 = 0$$

answer in box 6 on the front

7 Solve, giving your answers in exact form: **3 marks**

$$x^2 - 2x - 5 = 0$$

answer in box 7 on the front

8 Write in the form $(x + h)^2 + k$: **2 marks**

$$x^2 + 8x + 5$$

answer in box 8 on the front

9 Find the coordinates of the vertex of the parabola **2 marks**

$$y = x^2 - 4x + 1$$

answer in box 9 on the front

10 Find the value of the discriminant of **1 mark**

$$2x^2 - 3x + 4$$

answer in box 10 on the front

11 This equation has exactly one real solution, and $k > 0$. Find k. **2 marks**

$$x^2 + kx + 9 = 0$$

answer in box 11 on the front

12 The product of two consecutive positive integers is 156. Find the smaller integer. **3 marks**

answer in box 12 on the front