

## Sort It Out

## Solving Quadratic Equations

Sort these equations into the four categories given, stating the solutions to each equation.

|           |                       |           |                            |
|-----------|-----------------------|-----------|----------------------------|
| <b>1</b>  | $(x - 3)(x + 5) = 0$  | <b>11</b> | $3x^2 + 9x = 0$            |
| <b>2</b>  | $(2x - 3)(x - 1) = 0$ | <b>12</b> | $4x^2 - 9 = 0$             |
| <b>3</b>  | $x(3x + 7) = 0$       | <b>13</b> | $x^2 - 9x - 22 = 0$        |
| <b>4</b>  | $x^2 - 6x + 8 = 0$    | <b>14</b> | $4x^2 + 12x + 9 = 0$       |
| <b>5</b>  | $x^2 + 7x - 30 = 0$   | <b>15</b> | $12x - 3x^2 = 0$           |
| <b>6</b>  | $x^2 - 49 = 0$        | <b>16</b> | $x^2 = x + 6$              |
| <b>7</b>  | $x^2 + 8x = 0$        | <b>17</b> | $10 - 3x^2 = 13x$          |
| <b>8</b>  | $x^2 + 2x + 1 = 0$    | <b>18</b> | $x(x - 5) = 14$            |
| <b>9</b>  | $2x^2 + 9x + 4 = 0$   | <b>19</b> | $3x(x - 1) = 8 - x$        |
| <b>10</b> | $5x^2 - 14x - 3 = 0$  | <b>20</b> | $3(x + 3) = 9x(1 - x) + 8$ |

|          |                                                                    |          |                                                                        |
|----------|--------------------------------------------------------------------|----------|------------------------------------------------------------------------|
| <b>A</b> | There are two distinct solutions which are both non-zero integers. | <b>B</b> | There are two distinct solutions - one or both are non-zero fractions. |
|          |                                                                    |          |                                                                        |
| <b>C</b> | There are two distinct solutions, one of which is zero.            | <b>D</b> | There is one repeated solution.                                        |
|          |                                                                    |          |                                                                        |