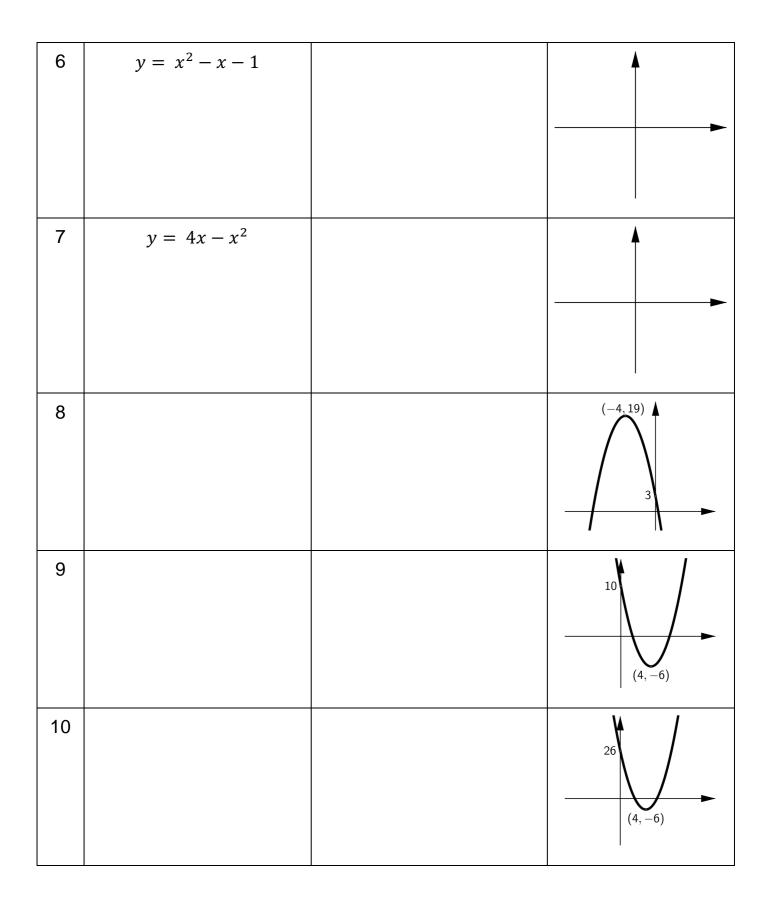
## **Completing the square and parabolas**

Fill in all the blanks on this table so that for each parabola you have the equation in standard form, vertex form (completed square form) and a sketch. Your sketch must label both the turning point and the y-intercept.

|   | Standard Form       | Vertex form       | Sketch      |
|---|---------------------|-------------------|-------------|
| 1 | $y = x^2 - 6x + 10$ |                   |             |
| 2 |                     | $y = (x-1)^2 + 4$ |             |
| 3 |                     |                   | (-2, -9)    |
| 4 | $y = x^2 - 20x$     |                   |             |
| 5 |                     |                   | 9<br>(3, 0) |



## **Completing the square and parabolas - Answers**

Fill in all the blanks on this table so that for each parabola you have the equation in standard form, vertex form (completed square form) and a sketch. Your sketch must label both the turning point and the y-intercept.

|   | Standard Form       | Vertex form            | Sketch          |
|---|---------------------|------------------------|-----------------|
| 1 | $y = x^2 - 6x + 10$ | $y = (x - 3)^2 + 1$    |                 |
| 2 | $y = x^2 - 2x + 5$  | $y = (x-1)^2 + 4$      | 5(1, 4)         |
| 3 | $y = x^2 + 4x - 5$  | $y = (x+2)^2 - 9$      | (-2, -9)        |
| 4 | $y = x^2 - 20x$     | $y = (x - 10)^2 - 100$ | 0<br>(10, -100) |
| 5 | $y = x^2 - 6 + 9$   | $y = (x - 3)^2$        | 9<br>(3, 0)     |

| 6  | $y = x^2 - x - 1$     | $y = \left(x - \frac{1}{2}\right)^2 - \frac{5}{4}$ | $-1\left(\frac{1}{2},\frac{-5}{4}\right)$ |
|----|-----------------------|--|---|
| 7  | $y = 4x - x^2$        | $y = -(x-2)^2 + 4$                                 |   |
| 8  | $y = 3 - 8x - x^2$    | $y = -(x+4)^2 + 19$                                |   |
| 9  | $y = x^2 - 8x + 10$   | $y = (x-4)^2 - 6$                                  |   |
| 10 | $y = 2x^2 - 16x + 26$ | $y = 2(x-4)^2 - 6$                                 |   |