

## Quadratic review

Date \_\_\_\_\_ Period \_\_\_\_\_

**Solve each equation by factoring (X method).**

1)  $p^2 - 9p + 14 = 0$

2)  $x^2 + x - 30 = 0$

3)  $x^2 - 11x + 28 = 0$

4)  $m^2 - 3m - 18 = 0$

5)  $a^2 - 6a - 16 = 0$

6)  $n^2 + 2n - 3 = 0$

7)  $v^2 - 9 = 0$

8)  $r^2 - 3r - 40 = 0$

9)  $v^2 + 9v + 14 = 0$

10)  $3x^2 - 15x - 72 = 0$

**Solve each equation by factoring (X method). For these problems [a≠1]. Put ac at top x and divide factors by a.**

11)  $3n^2 + 20n - 32 = 0$

12)  $49n^2 - 77n + 30 = 0$

13)  $3r^2 - 13r - 30 = 0$

14)  $4p^2 + 25p + 6 = 0$

For each quadratic function, graph using 5-step method:

1. Plot y intercept

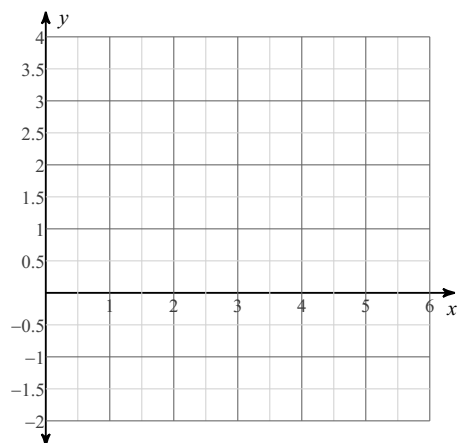
2. Write in factored form and plot x-intercepts

3. Find line of symmetry (LoS) and graph (LoS is between x-intercepts; it is also  $x = -\frac{b}{2a}$ )

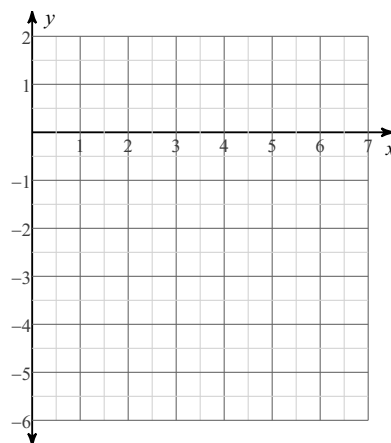
4. Find the vertex, by replacing  $x$  with  $-\frac{b}{2a}$  in equation and solving for  $y$ . Plot the vertex.

5. Find the point symmetrical to y-intercept.

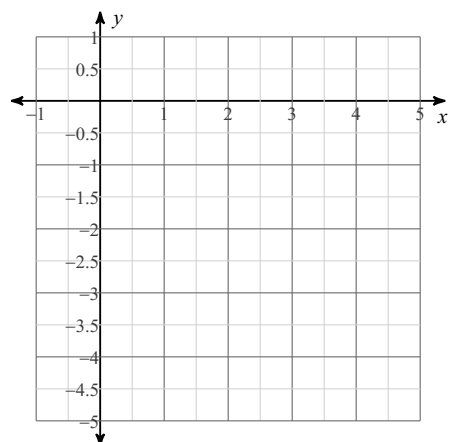
15)  $y = x^2 - 4x + 3$



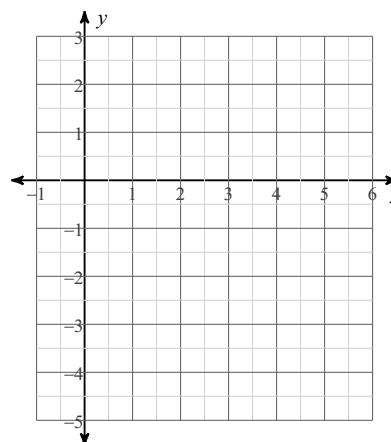
16)  $y = x^2 - 8x + 12$



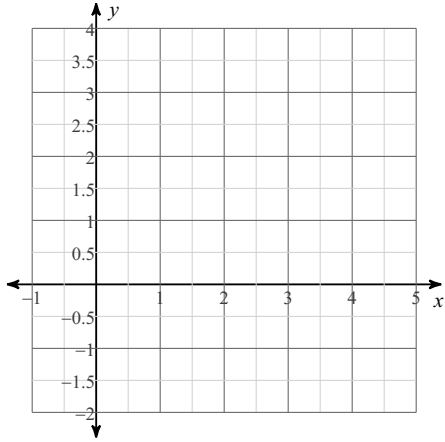
17)  $y = x^2 - 2x - 3$



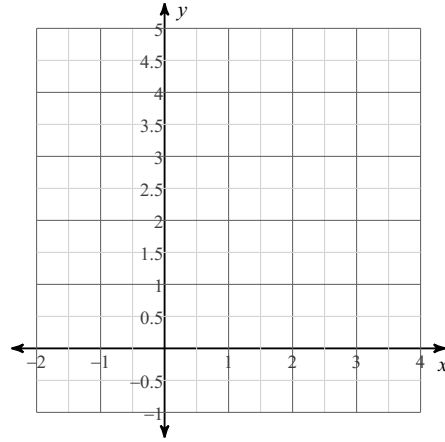
18)  $y = -x^2 + 8x - 15$



19)  $y = x^2 - 2x$



20)  $y = x^2$



**Simplify.**

21)  $\sqrt{32}$

22)  $\sqrt{18}$

23)  $\sqrt{50}$

24)  $\sqrt{12r^2}$

25)  $\sqrt{50x^2}$

26)  $7\sqrt{80x}$

**Simplify. Your answer should contain only positive exponents.**

27)  $4^2 \cdot 4^3$

28)  $4^2 \cdot 4^0$

29)  $(3^2)^{-3}$

30)  $(3^{-3})^{-1}$

31)  $\frac{4^4}{4}$

32)  $\frac{4}{4^3}$