

# Identify and interpret roots, intercepts and turning points of quadratic graphs

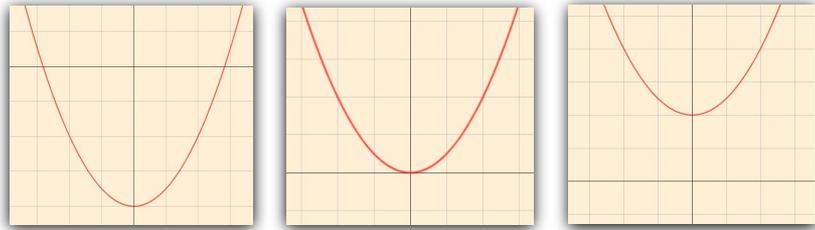
Maths

Mr Clasper



# Identify and interpret roots, intercepts and turning points

1. How many solutions does each graph have?

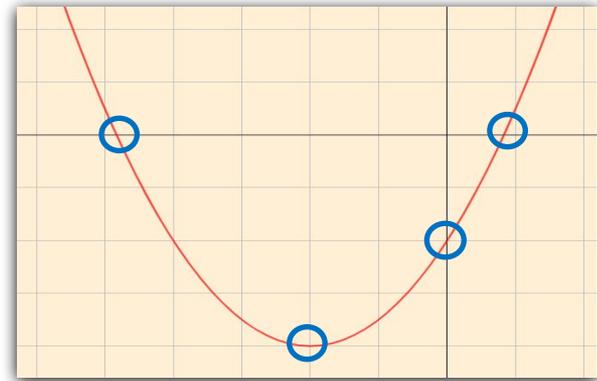


2. How many roots do these equations have?

a)  $y = (x + 1)^2$       b)  $y = (x + 1)(x - 1)$

c)  $y = x^2 - 1$       d)  $y = x^2 + 1$

3. Identify the parts of the graph that are circled.



y-intercept      Roots      Turning point

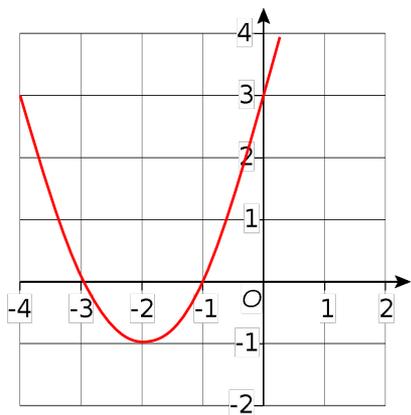
4. Which co-ordinate is a y-intercept?

$(-1, 0)$        $(0, -1)$        $(2, 3)$        $(-1, 7)$



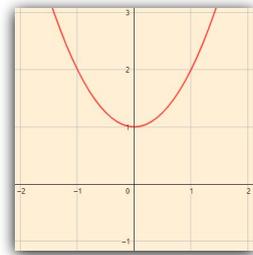
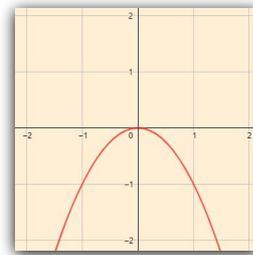
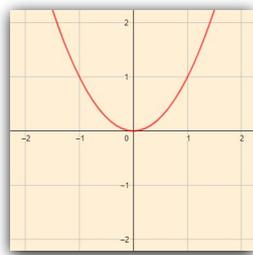
# Identify and interpret roots, intercepts and turning points

5. Here is a quadratic graph.



- Write down the roots.
- Write down the y-intercept.
- Write down the equation of the line of symmetry.

6. The turning point of which graph is the 'maximum value of  $y$ '?



7. Turning points are below the y-intercept, is this true?

Always

Sometimes

Never

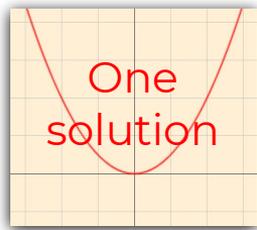
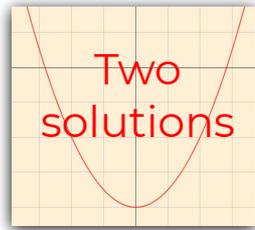


# Answers



# Identify and interpret roots, intercepts and turning points

1. How many solutions does each graph have?

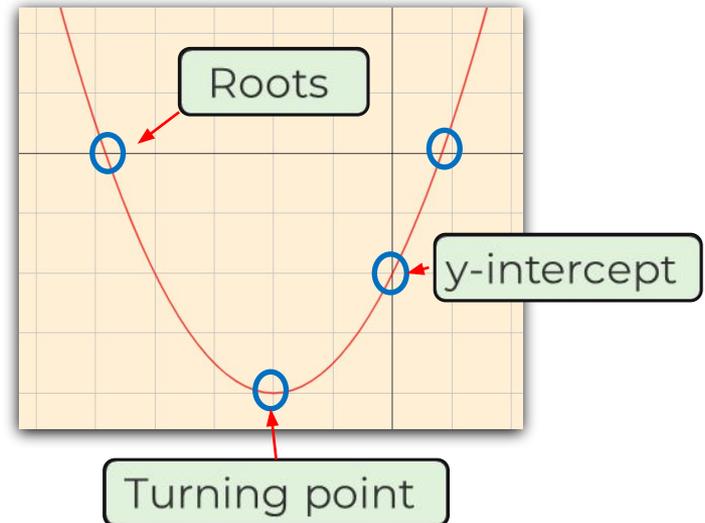


2. How many roots do these equations have?

a)  $Y = (x + 1)^2$  **One**    b)  $y = (x + 1)(x - 1)$  **Two**

c)  $y = x^2 - 1$  **Two**    d)  $y = x^2 + 1$  **No real solutions**

3. Identify the parts of this graph that are circled.



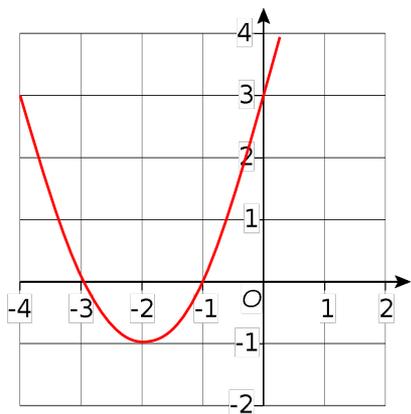
4. Which co-ordinate is a y-intercept?

- (-1, 0)     (0, -1)     (2, 3)     (-1, 7)



# Identify and interpret roots, intercepts and turning points

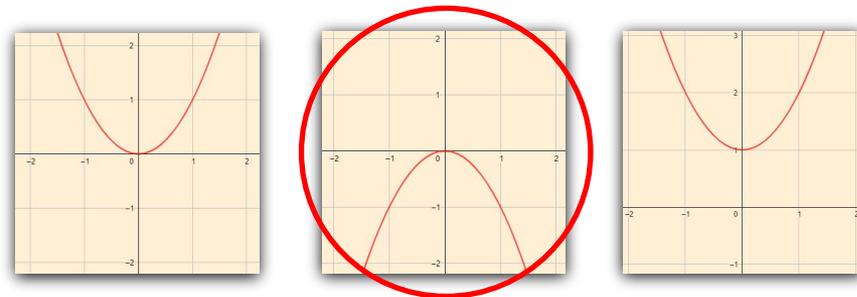
5. Here is a quadratic graph.



$x = -3$  and

- a) Write down the roots.  $x = -1$
- b) Write down the y-intercept.  $(0, 3)$
- c) Write down the equation of the line of symmetry.  $x = -2$

6. The turning point of which graph is the 'maximum value of  $y$ '?



7. Turning points are below the y-intercept, is this true?

Always

Sometimes

Never

Sometimes true

