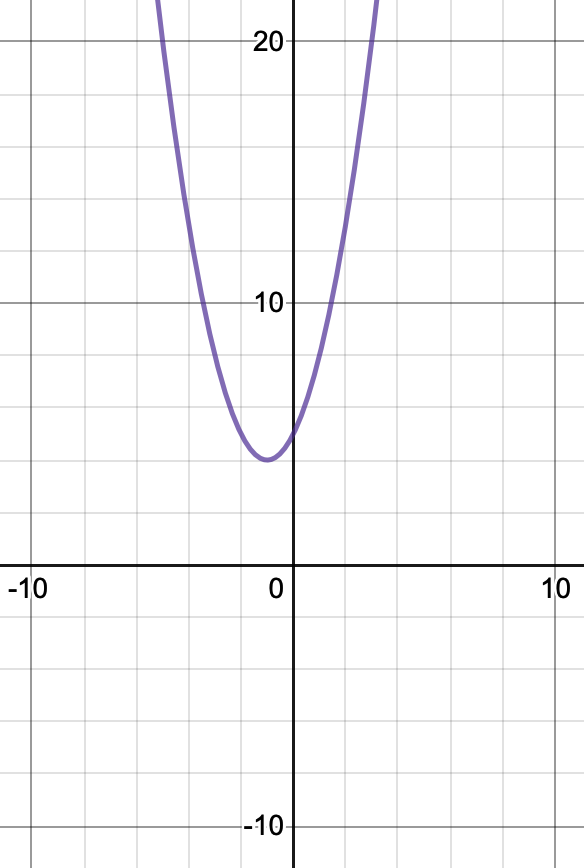
**Task 1:**

1. Match the graphs to the equation, using the discriminant ().

  A close up of a white wall

Description automatically generated

**Task 2**

**Find the nature of the roots for the following:**

Use the discriminant!

**Task 3**

Fill in the table of values for y = x2+8x+15.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| x | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 |
| y |  |  |  |  |  |  |  |  |  |

1. Use these as coordinates to plot the graph on a sheet of graph paper.
2. How many roots are there?
3. What is the discriminant?

**Supporting notes:**

Have a look at this link if you need a refresher on the discriminant:

https://www.bbc.co.uk/bitesize/guides/zcwhjty/revision/1

**Answers:**

* 1. . The discriminant is Therefore there is one real, repeated root. The graph touches the x axis once. This is the last graph.
  2. . The discriminant is This is positive so there are two real and distinct roots. The graph crosses the x axis twice. This is the first graph.
  3. . The discriminant is This is negative so there are no real roots. The graph does not cross the x axis. This is the middle graph.
  4. No real roots.
  5. Two real and distinct roots.
  6. Two real and distinct roots.



|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| x | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 |
| y | 3 | 0 | -1 | 0 | 3 | 8 | 15 | 24 | 35 |

* 1. A close up of a device

     Description automatically generated



* 1. 2 real and distinct roots
  2. y = x2+8x+15. The discriminant is This is positive which is what we expect because the graph shows two real and distinct roots.