

## Plotting Non-Linear Graphs – Create-a-Picture

For each of the following equations, complete the table of values and plot the graph of the equation between the  $x$ -values given. Give  $y$ -coordinates to 1 decimal place where appropriate.

1.  $y = 0.11x^3 - 13 \quad \{-2 \leq x \leq 4\}$

$x$	-2	-1	0	1	2	3	4
$y$							

2.  $y = 0.5(x - 6)^3 - 2 \quad \{4 \leq x \leq 6\}$

$x$	4	4.25	4.5	4.75	5	5.25	5.5	5.75	6
$y$									

3.  $y = -\frac{x^2}{16} - 5 \quad \{-4 \leq x \leq 4\}$

$x$	-4	-3	-2	-1	0	1	2	3	4
$y$									

4.  $y = x^2 + 2x - 14 \quad \{-4.2 \leq x \leq -2\}$

$x$	-4.2	-4	-3.5	-3	-2.5	-2
$y$						

5.  $y = -0.15(x - 2)^2 + 1.5 \quad \{-4.2 \leq x \leq 6.3\}$

$x$	-4.2	-2.1	0	2.1	4.2	6.3
$y$						

6.  $y = -\frac{x^2}{16} - 3.5 \quad \{-4.2 \leq x \leq 4.2\}$

$x$	-4.2	-3	-2	-1	0	1	2	3	4.2
$y$									

7.  $y = 0.08(x + 2)^2(x - 2)^2 - 9 \quad \{-3.2 \leq x \leq 3.2\}$

$x$	-3.2	-2	-1	0	1	2	3.2
$y$							

Now add the following circle:

8.  $(x - 7)^2 + (y + 2)^2 = 1$

9.  $(x + 1.5)^2 + (y + 6.5)^2 = 0.5$

10.  $(x - 1.5)^2 + (y + 6.5)^2 = 0.5$

Finally, colour in your picture!

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