3. Set up a table as shown. Write each function in the appropriate row of column 2. Give reasons for your choices.

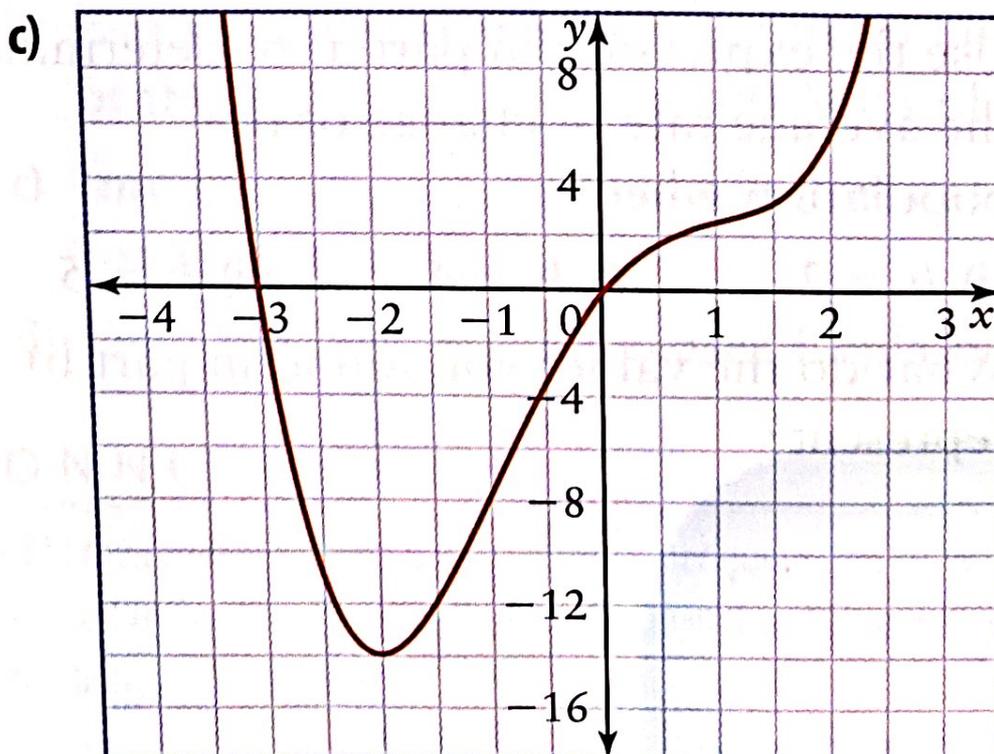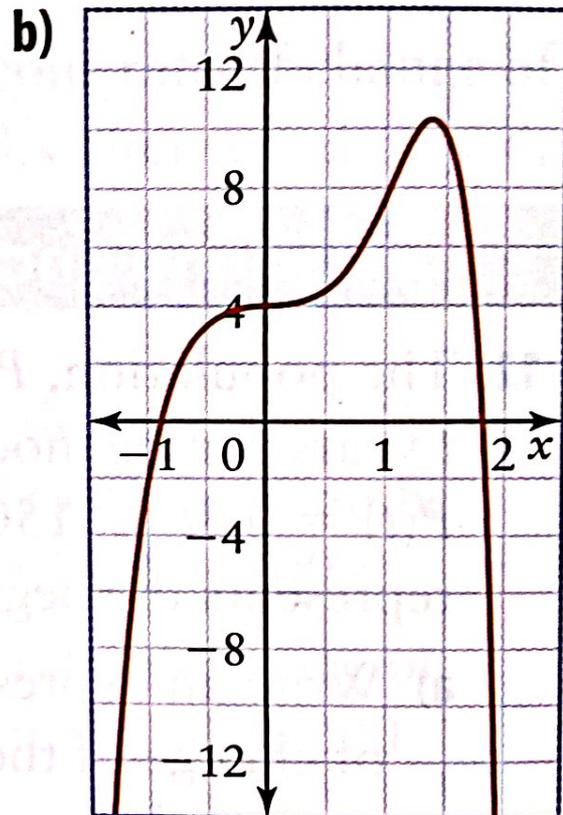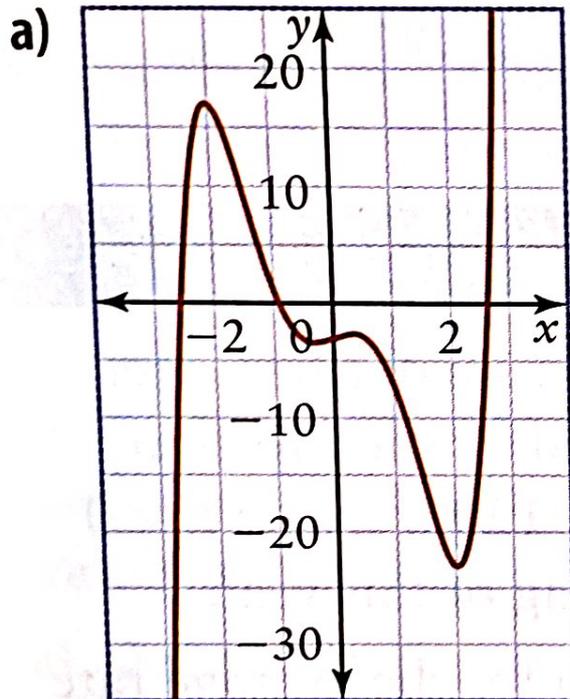$$y = -x^5, \; y = \frac{2}{3}x^4, \; y = 4x^3, \; y = 0.2x^6$$

End Behaviour	Function	Reasons
Extends from quadrant 3 to quadrant 1		
Extends from quadrant 2 to quadrant 4		
Extends from quadrant 2 to quadrant 1		
Extends from quadrant 3 to quadrant 4		

4. Match each graph of a polynomial function with the corresponding equation. Justify your choice.
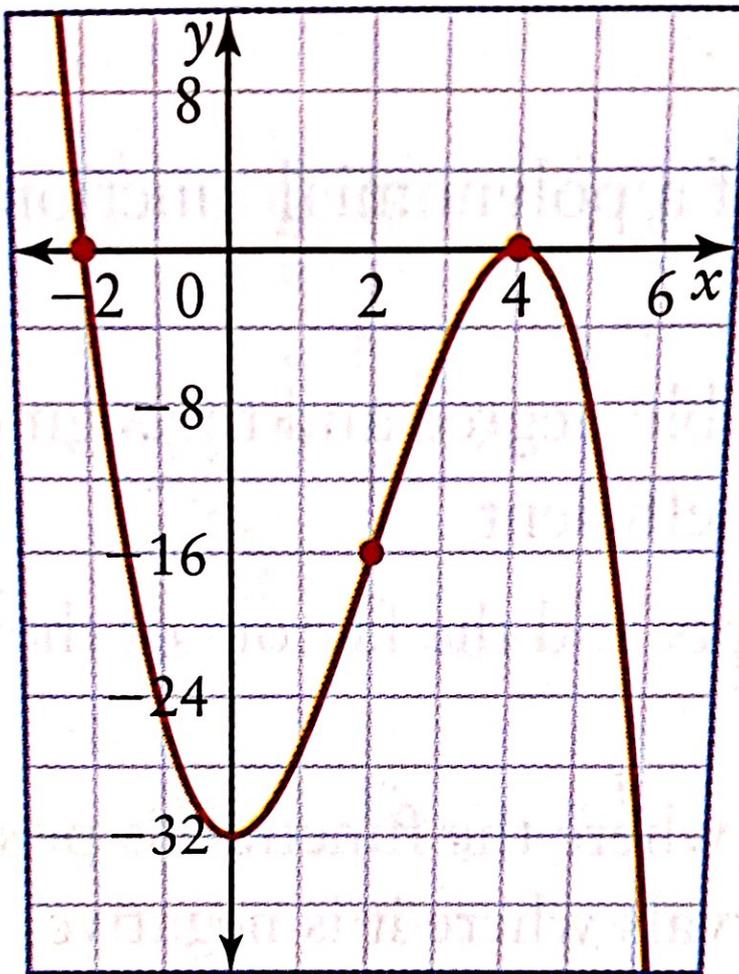
   i) $g(x) = 0.5x^4 - 3x^2 + 5x$

   ii) $h(x) = x^5 - 7x^3 + 2x - 3$

   iii) $p(x) = -x^6 + 5x^3 + 4$

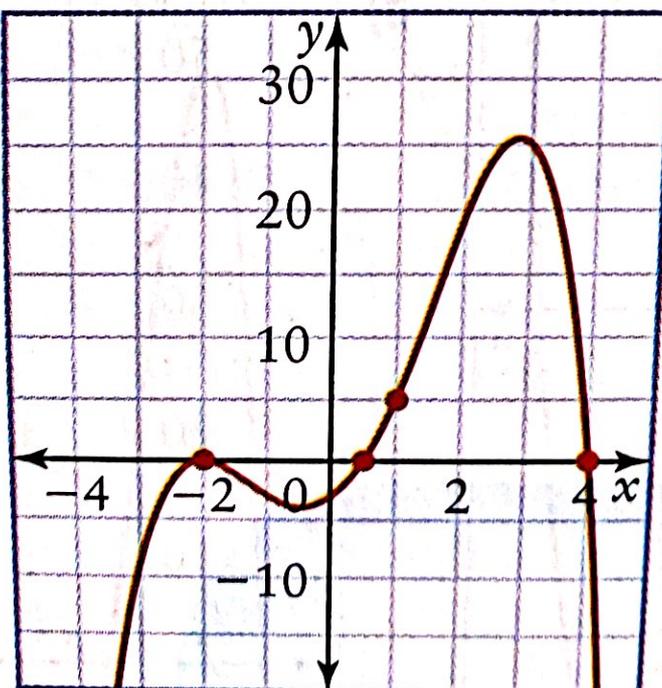**a)**

b)

c)

13. Determine an equation for the polynomial function that corresponds to each graph.

a)

b)

14. i) Describe the transformations that must be applied to the graph of each power function, $f(x)$, to obtain the transformed function. Then, write the corresponding equation.

ii) State the domain and range of the transformed function. For even functions, state the vertex and the equation of the axis of symmetry.

a) $f(x) = x^3$, $y = -\dfrac{1}{4}f(x) - 2$

b) $f(x) = x^4$, $y = 5f\left[\dfrac{2}{5}(x - 3)\right] + 1$

17. The graph represents the approximate value of a stock over 1 year.
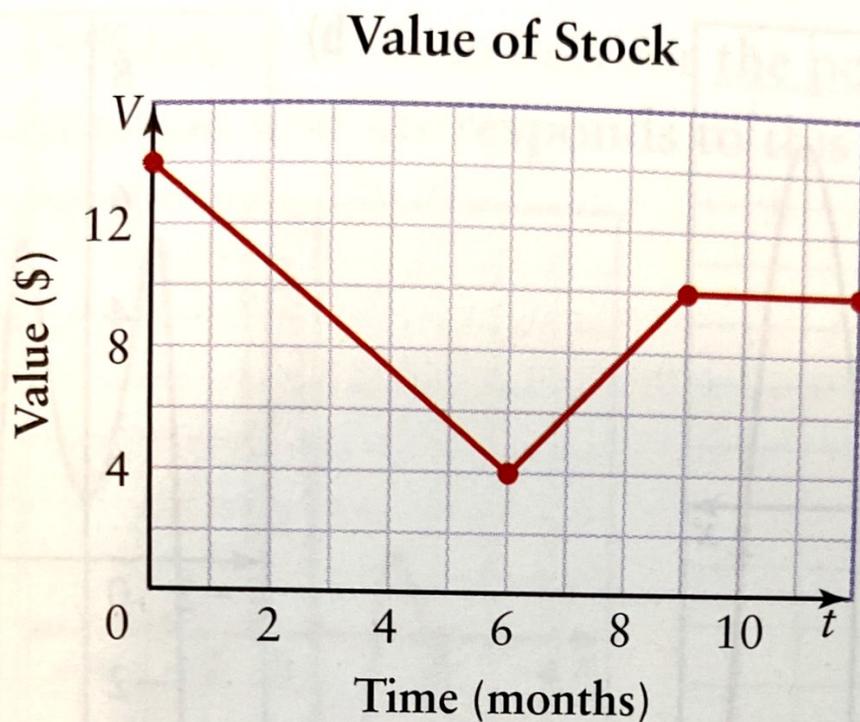
Value of Stock

a) What was the value of the stock at the start of the year? at the end of the year?

b) What does the graph tell you about the average rate of change of the value of the stock in each interval?

    i) month 0 to month 6

    ii) month 6 to month 9

    iii) month 9 to month 12

c) Determine the average rate of change of the value of the stock for the time periods in part b). Interpret these values for this situation.