

10th February



Corbettmaths

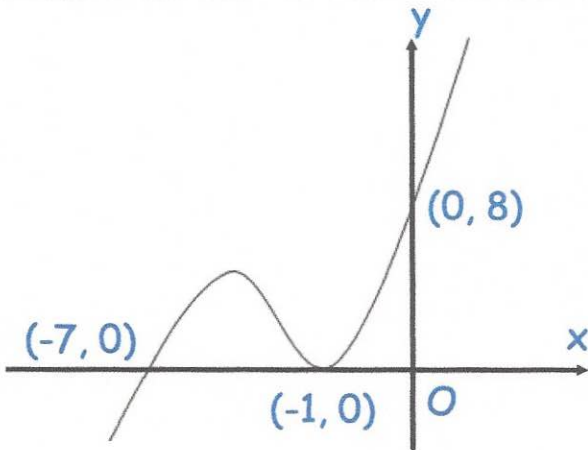
Prove that the product of two odd numbers is always odd.

$$(2m+1)(2n+1)$$

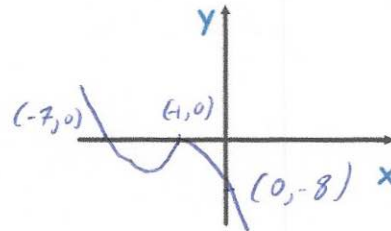
$$4mn + 2m + 2n + 1$$

$$2(2mn + m + n) + 1$$

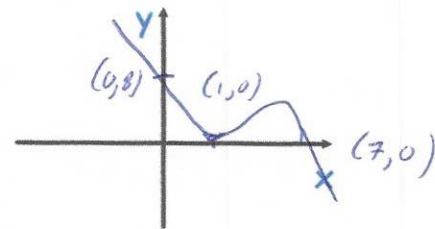
\therefore odd



Sketch $y = -f(x)$



Sketch $y = f(-x)$



Find the 20th term in the quadratic sequence

5 6 9 14 21
1 3 5 7
2 2 2

$$2a = 2$$

$$a = 1$$

$$3a + b = 1$$

$$3 + b = 1$$

$$b = -2$$

$$a + b + c = 5$$

$$1 - 2 + c = 5$$

$$c = 6$$

$$n^2 - 2n + 6$$

$$20^2 - 2 \times 20 + 6 = 366$$

Find x
Give your answers to 2 decimal places

$$\frac{7(x-1) + (x+3)}{(x+3)(x-1)} = 1$$

$$\frac{7x-7+x+3}{(x+3)(x-1)} = 1$$

$$\frac{7}{x+3} + \frac{1}{x-1} = 1$$

$$\frac{8x-4}{(x+3)(x-1)} = 1$$

$$8x-4 = x^2 + 2x - 3$$

$$0 = x^2 - 6x + 1$$

~~asymptote~~
Quadratic formula

$$x = 5.83 \text{ or } x = 0.17$$