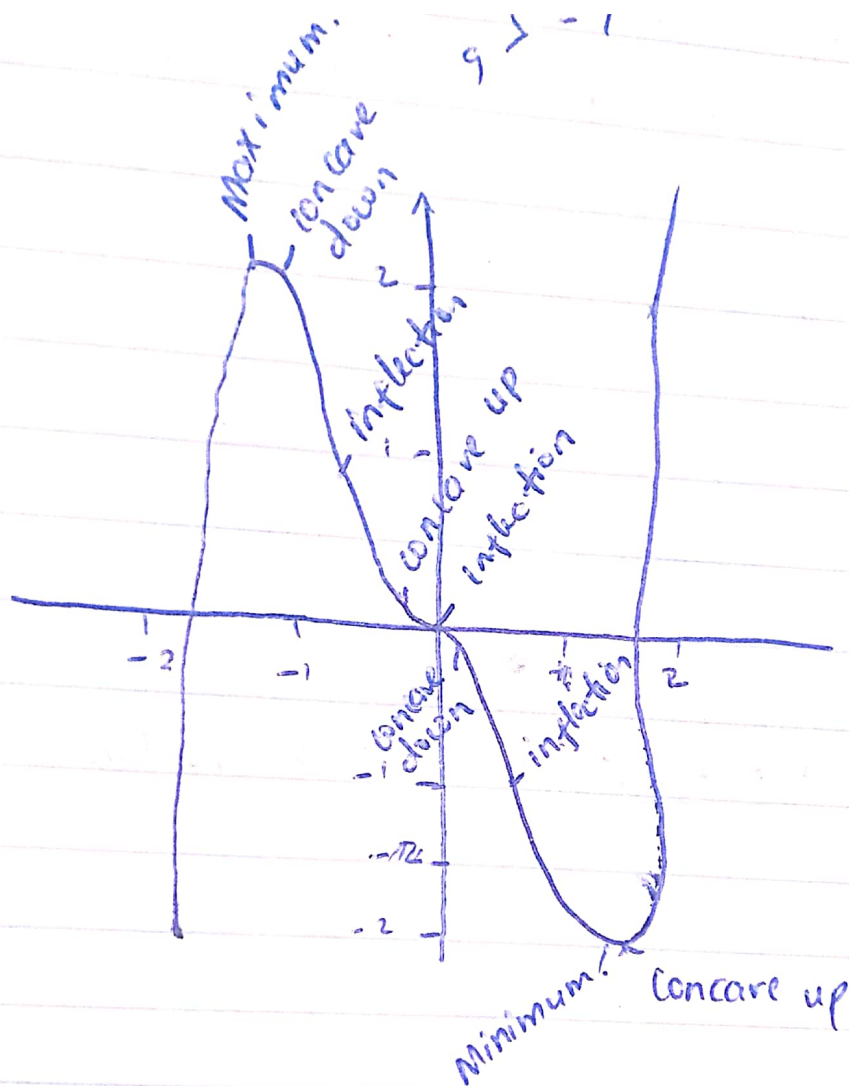




(c) The graph falls on the left and rises on the right

(d) The degree is 5. It has 4 turning points
 $\text{degree} = n + 1 = 4 + 1 = 5$

2. Quartic function since it has 3 concavities

$$3. f(x) = \frac{(x-1)(x+12)}{(x-12)(x+1)}$$

The denominator should not be zero

$$(x-12)(x+1) = 0$$

$$x = 12, x = -1$$

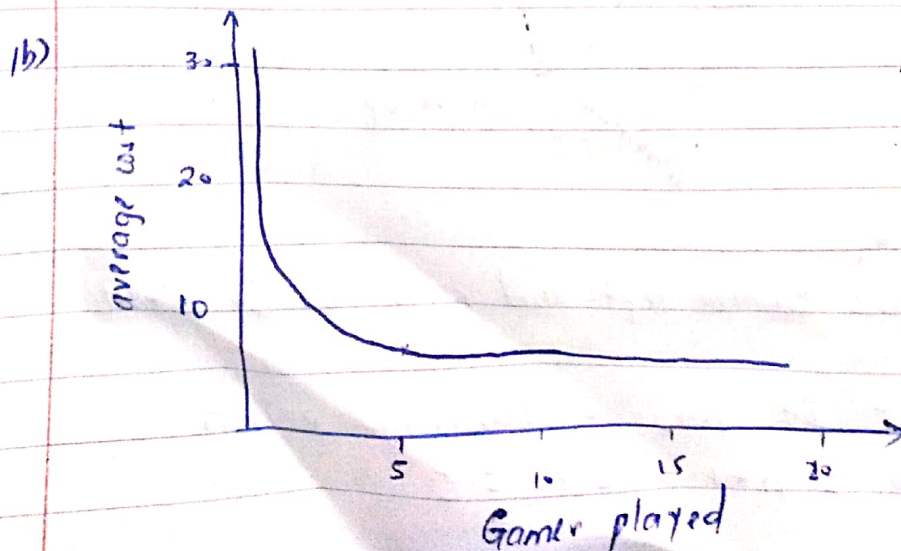
$$4. f(x) = \frac{3x^2 - 3x - 6}{-2x^2 + 8x + 16}$$

Denominator and numerator have the same degree
Divide the leading coefficient ~~for~~ ^{of} numerator by
the leading coefficient of the denominator.

$$y = \frac{3}{-2} \quad \text{or} \quad y = -\frac{3}{2}$$

$$5. a(9) = \frac{4.999 + 4.25}{9}$$

$$a) a(10) = \frac{4.99(10) + 4.25}{10} = 5.415 \text{ dollars}$$



(c) As the number of games increase, the average cost per game is reduced as it approaches \$4.99.

6

(a) Quartic Regression.

$$V(t) = 0.166t^4 - 5.112t^3 + 44.837t^2 - 44.493t + 528.991$$

(b) $t = 2020 - 1990 = 30$

$$\begin{aligned} V(30) &= 0.166(30)^4 - 5.112(30)^3 + 44.837(30)^2 - 44.493(30) \\ &\quad + 528.991 \\ &= 35983.501 \end{aligned}$$

(c) $r^2 = 0.997$

$$r = \sqrt{0.997} = 0.998$$

Yes. The correlation coefficient is very close to 1.