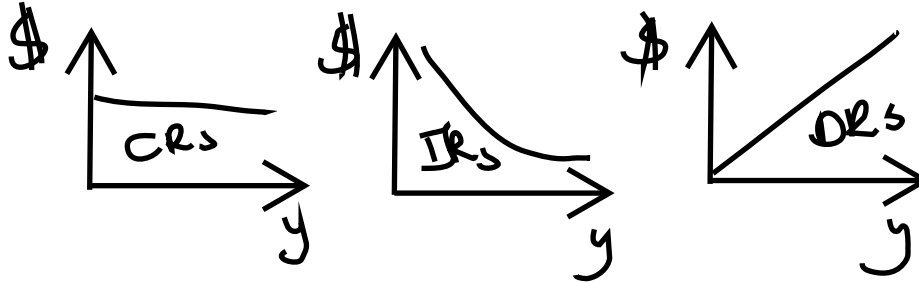


and marginal costs are

$$MC(y) = 1$$

$$MC(y) = \frac{1}{2} \frac{1}{\sqrt{y}}$$

$$MC(y) = 2y$$

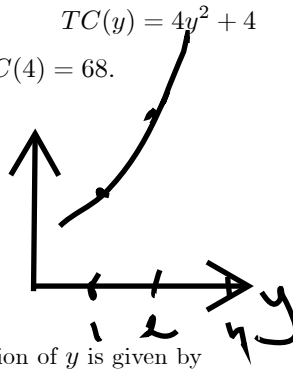


Problem 4 (Cost curves)

- a) Decreasing - the exponent in the cost function is greater than one.
- b) Total cost function is

$$TC(y) = 4y^2 + 4$$

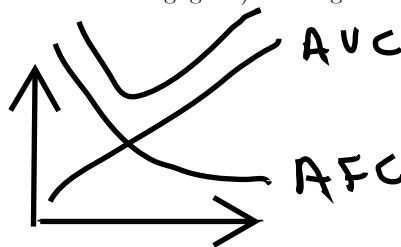
hence $TC(1) = 8$, $TC(2) = 20$ and $TC(4) = 68$.



- c) The average fixed cost as a function of y is given by

$$AFC(y) = \frac{4}{y}$$

and hence $AFC(1) = 4$, $AFC(2) = 2$ and $AFC(4) = 1$. It becomes zero as y gets larger (with large production the constant fixed cost per unit becomes negligible) and it goes to infinity as y approaches zero.



- d) The average cost function is linear and is given by

$$AVC(y) = 4y$$

and hence $AVC(1) = 4$, $AVC(2) = 8$ and $AVC(4) = 16$

- e) Average total cost is given by

$$ATC = AVC + AFC = 4y + \frac{4}{y}$$