Estimating the Gradient of a Curve

(a)

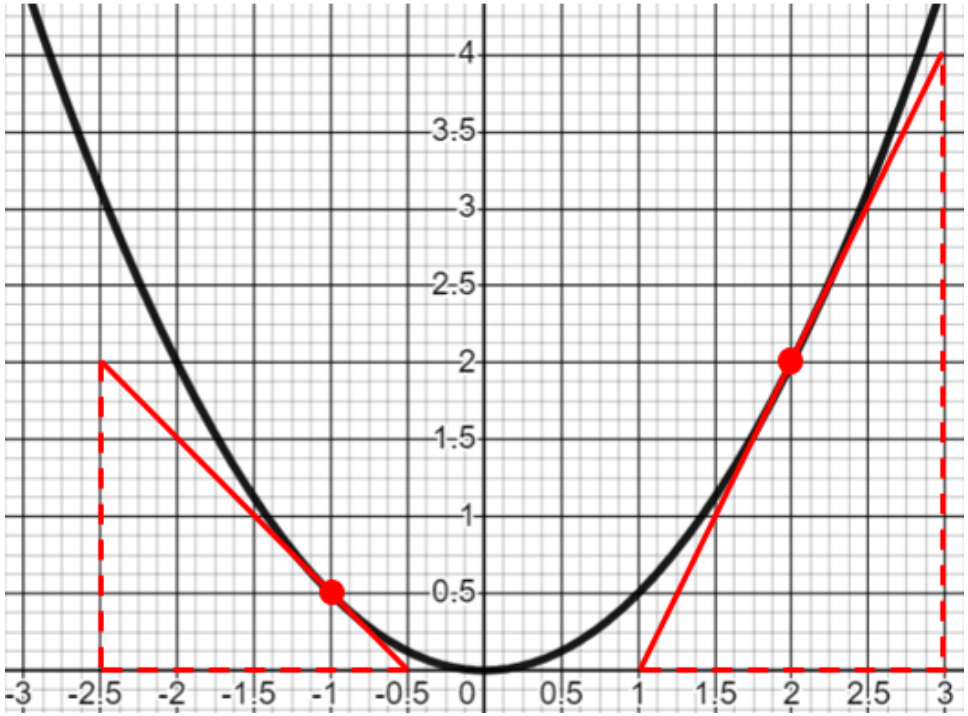
Estimate the gradient of the curve at

(a) $x = 2$

$$\frac{4-0}{3-1} = 2$$

(b) $x = -1$

$$\frac{0-2}{-0.25-(-2.5)} = -1$$



(b)

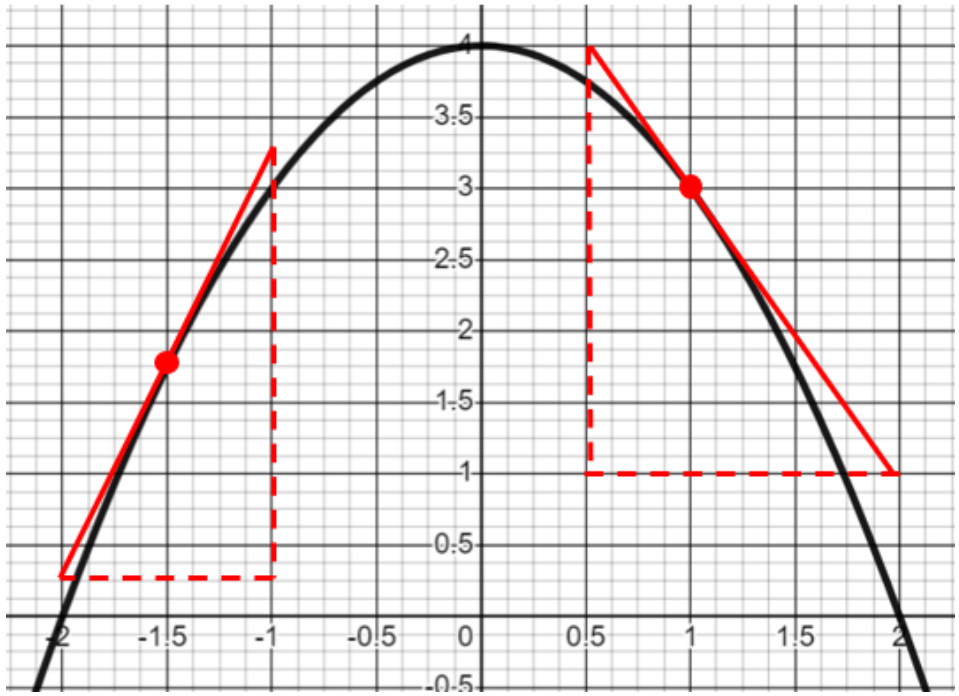
Estimate the gradient of the curve at

(a) $x = -1.5$

$$\frac{3.25-0.25}{-1-(-2)} = 3$$

(b) $x = 1$

$$\frac{1-4}{2-0.5} = -2$$



(c)

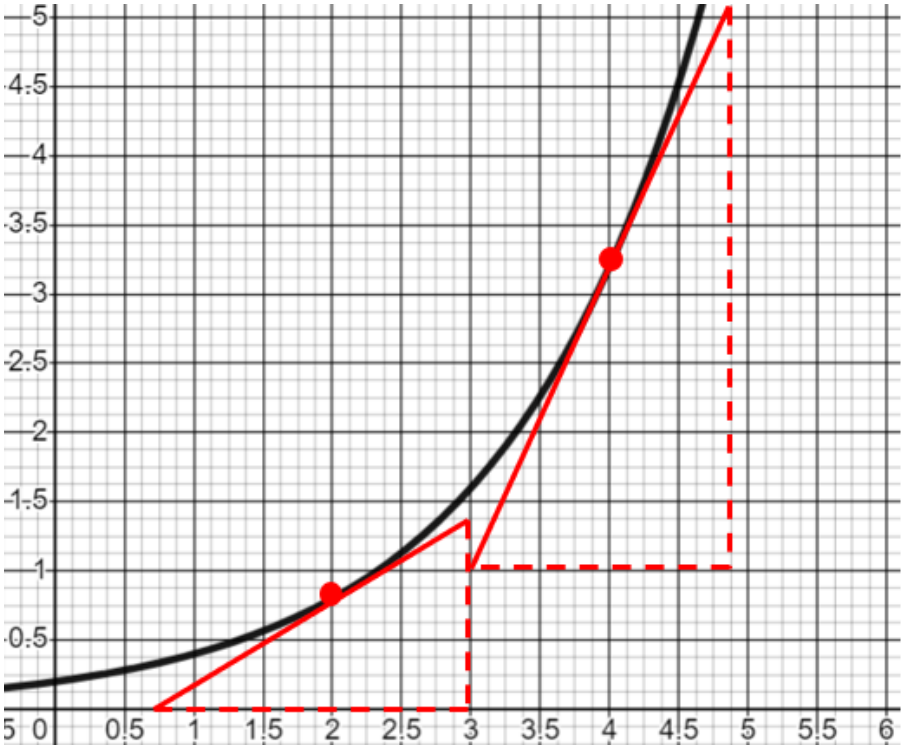
Estimate the gradient of the curve at

(a) $x = 2$

$$\frac{1.375 - 0}{3 - 0.75} \approx 0.6$$

(b) $x = 4$

$$\frac{5 - 1}{4.875 - 3} \approx 2.1$$



(d)

Estimate the gradient of the curve at

(a) $x = 2$

$$\frac{-1.5 - 0.75}{2.5 - 1} = -1.5$$

(b) $x = -1$

$$0$$