P.235

April 18, 2017

Contents

$$
\begin{aligned}
f(x) &= 3(x-2)^2 - 2 \\
2 \leq x &\leq 4 \\
f(2) &= 3(2-2)^2 - 2 \\
&= -2 \\
f(4) &= 3(4-2)^2 - 2 \\
&= 3(2)^2 - 2 \\
&= 6 \\
Aroc &= \frac{f(x_2) - f(x_1)}{x_2 - x_1} \\
&= \frac{6-(-2)}{4-2} \\
&= 4
\end{aligned}
$$

ii.

$$
\begin{aligned}
f(x) &= 3(x-2)^2 - 2 \\
2 \leq x &\leq 6 \\
f(2) &= 3(2-2)^2 - 2 \\
&= -2 \\
f(6) &= 3(6-2)^2 - 2 \\
&= 3(3)^2 - 2 \\
&= 21 \\
Aroc &= \frac{f(x_2) - f(x_1)}{x_2 - x_1} \\
&= \frac{21 - (-2)}{6 - 2} \\
&= \frac{23}{4}
\end{aligned}
$$

iii.

$$
\begin{aligned}
f(x) &= 3(x-2)^2 - 2 \\
4 \leq x &\leq 6 \\
f(4) &= 3(4-2)^2 - 2 \\
&= 6 \\
f(6) &= 3(6-2)^2 - 2 \\
&= 3(3)^2 - 2 \\
&= 21 \\
Aroc &= \frac{f(x_2) - f(x_1)}{x_2 - x_1} \\
&= \frac{21 - 6}{6 - 4} \\
&= \frac{15}{2}
\end{aligned}
$$

(b)

(c)

(d)

(e)

4. i

5.

6.

10. i

13. i