

Section 2.4

$$18. \quad g(t) = t^4 - t^3 + t^2$$

$$\text{Net Change} = g(2) - g(-2) = (16 - 8 + 4) - (16 + 8 + 4) = \boxed{-16}$$

$[-2, 2]$

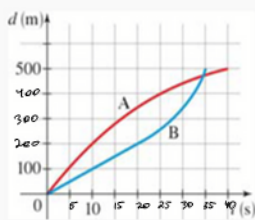
$$\text{avg rate of change} = \frac{g(2) - g(-2)}{2 - (-2)} = \frac{-16}{4} = \boxed{-4}$$

$[-2, 2]$

Answer ↓

38. **Speed Skating** Two speed skaters, A and B, are racing in a 500-m event. The graph shows the distance they have traveled as a function of the time from the start of the race.

- Who won the race?
- Find the average speed during the first 10 s for each skater.
- Find the average speed during the last 15 s for each skater.



a. Skater B won.

$$b. \quad \text{A Avg Speed} = \frac{200 - 0}{10 - 0} = 20 \text{ m/s}$$

$[0, 10]$

$$\text{B Avg speed} = \frac{100 - 0}{10 - 0} = 10 \text{ m/s}$$

$[0, 10]$

$$c. \quad \text{A Avg Speed} = \frac{500 - 400}{40 - 25} = \frac{100}{15} = 6.67 \text{ m/s}$$

$[25, 40]$

$$\text{B Avg speed} = \frac{500 - 200}{35 - 20} = \frac{300}{15} = 20 \text{ m/s}$$

$[20, 35]$