

Worksheet 5
Some More Problems
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1. Find the average value of the arc

$$f : \mathbb{R} \longrightarrow \mathbb{R}$$
$$f(x) = (x^3 - 6x)^2$$

from $x = 1$ to $x = 3$.

2. Find the average value of the arc

$$g : \mathbb{R} \longrightarrow \mathbb{R}$$
$$g(x) = x \cdot (x^3 - 6x)^2$$

from $x = 1$ to $x = 3$.

3. Without integrating (but look at the graph), where would the average value of the arc

$$h : \mathbb{R} \longrightarrow \mathbb{R}$$
$$h(x) = \frac{2}{7}(x - 3)^2$$

from $x = 0$ to $x = 3$ lie?

- A. between $x = 0$ and $x = 3$
- B. between $y = 0$ and $y = \frac{2}{7}$
- C. between $y = 0$ and $y = \frac{1}{2}$
- D. between $y = \frac{1}{2}$ and $y = 1$
- E. between $y = 0$ and $y = 4\frac{1}{2}$
- F. between $y = 4\frac{1}{2}$ and $y = 9$