

Problem Set 91

2a. 8 units to the right

b. 14

4a. $\frac{1}{4}$, $\frac{3}{4}$

b. 4 units

6. 0

8. 0

10. -96 ft/sec

12. $b = 5$

14. $c = \frac{b+a}{2}$; midpoint = $\frac{b+a}{2}$

16. $\frac{81}{2}\pi$ units³

18. $y = \frac{2}{3 - 2x^4}$

20a. 70 mph

b. Yes. The truck must attain its average speed at least once on the given interval of time.

22. $\frac{1}{2}x + \frac{1}{12}\sin(6x) + C$

24a. Domain: $\left\{x \in \mathfrak{R} \mid x \geq -\frac{1}{6}\right\}$

Range: $\{y \in \mathfrak{R} \mid y \geq 0\}$

b. $\left(\frac{4}{3}, 3\right)$