

Chapter 3 Review Extra Practice Answers

1. a. $v(t) = 3t^2 - 20t + 25$

$a(t) = 6t - 20$

b. $v(t) = -\frac{12}{(t-4)^3}$

$a(t) = \frac{36}{(t-4)^4}$

c. $v(t) = \frac{t}{\sqrt{t^2-5}}$

$a(t) = \frac{1}{\sqrt{t^2-5}} - \frac{t^2}{(t^2-5)^{\frac{3}{2}}}$

d. $v(t) = \frac{1}{4}t^3 + 3t^2 + \frac{4}{5}t^{-\frac{1}{5}}$

$a(t) = \frac{3}{4}t^2 + 6t - \frac{4}{25}t^{-\frac{6}{5}}$

e. $v(t) = \frac{2t}{(t+2)^{\frac{1}{2}}} - \frac{t^2}{2(t+2)^{\frac{3}{2}}}$

$a(t) = \frac{2}{(t+2)^{\frac{1}{2}}} - \frac{2t}{(t+2)^{\frac{3}{2}}} + \frac{3t^2}{4(t+2)^{\frac{5}{2}}}$

2. a. $t = 1$ and $t = 3$

b. Max: (3, 6.25)

c. Min: (4.1, 0)

d. $t \in (1, 3)$

e. $t \in (0, 1)$ and $t \in (3, 4.1)$

3. a. Max: (1.11, 36.5)

Min: (5, -1000)

b. Max: (0.27, 0.54)

Min: (1, 0)

c. Max: (4, 35.25)

Min: (1.48, 13.16)

4. 77.98 m

5. 8.15 km away, 7 minutes and 28 seconds after noon

6. \$0.17