

Homework #6

Section 6.4

1, 2, 3, 4, 5, 7, 11, 13, 15, 17, 19

Section 6.5

1, 3, 5, 7, 15, 17, 21, 23

(More problems from 6.5)

(1) Suppose that

$f(t)$ = The temperature of an oven after t minutes (in degrees F)

$g(t)$ = The rate at which the oven is warming after t minutes (in degrees F per min)

- (a) Write the amount the oven warmed up from 10 minutes to 30 minutes in terms of f .
- (b) Write the amount the oven warmed up from 10 minutes to 30 minutes in terms of g .
- (c) Write the average rate at which the oven warmed up from 10 minutes to 30 minutes in terms of g (in degrees F per minute)
- (d) Write the average rate at which the oven warmed up from 10 minutes to 30 minutes in terms of g (in degrees F per minute)

(2) Suppose that

$p(t)$ = The position of a bike (in feet) after t minutes

$v(t)$ = The velocity of the bike (in feet/minute) after t minutes

$a(t)$ = The acceleration of the bike (in feet/min²) after t minutes

- (a) Write the displacement of the bike from 10 minutes to 20 minutes in terms of p .
- (b) Write the displacement of the bike from 10 minutes to 20 minutes in terms of v .
- (c) Write the change in velocity of the bike from 10 minutes to 20 minutes in terms of v .
- (d) Write the change in velocity of the bike from 10 minutes to 20 minutes in terms of a .
- (e) Write the average velocity of the bike from 10 minutes to 20 minutes in terms of p .
- (f) Write the average velocity of the bike from 10 minutes to 20 minutes in terms of v .
- (g) Write the average acceleration of the bike from 10 minutes to 20 minutes in terms of v .
- (h) Write the average acceleration of the bike from 10 minutes to 20 minutes in terms of a .