(1) Suppose that

$$f(t) = \text{The temperature of an oven after } t \text{ minutes (in degrees F)}$$
$$g(t) = \text{The rate at which the oven is warming after } t \text{ minutes (in degrees F per min)}$$

(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 X (in degrees F per minute)

should have been f

(a) $\quad f(30) - f(10) \qquad {}^{\circ}F$

(b) $\quad \int_{10}^{30} g(t)\, dt \qquad {}^{\circ}F$

(c) $\quad \frac{1}{30-10} \int_{10}^{30} g(t)\, dt \qquad {}^{\circ}F/min$

(d) $\quad \dfrac{f(30) - f(10)}{30 - 10}$

(2) Suppose that

$$p(t) = \text{The position of a bike (in feet) after } t \text{ minutes}$$
$$v(t) = \text{The velocity of the bike (in feet/minute) after } t \text{ minutes}$$

should be a(t) → $a(t) = \text{The acceleration of the bike (in feet/min\^2) after } t \text{ minutes}$

(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.

(a) $\quad p(20) - p(10)$

(b) $\quad \int_{0}^{10} v(t)\, dt$

(c) $\quad v(20) - v(10)$

(d) $\quad \int_{10}^{20} a(t)\, dt$

(e) $\quad \dfrac{p(20) - p(10)}{20 - 10}$

(f) $\quad \frac{1}{20-10} \int_{10}^{20} v(t)\, dt$

(g) $\quad \dfrac{v(20) - v(10)}{20 - 10}$

(h) $\quad \frac{1}{20-10} \int_{10}^{20} a(t)\, dt$