**Answers to Integration using Data**

Ex. (a) 

 

 (c) 357.36 gallons

 (d) 8.64 gallons per hour

1. (a) Amt. gal

 (b) gal

2. (a) Temp. F

 (b) Ave. rate of change = 

 (c) F

 (d) The temperature is dropping at a rate of 

 (b) 

4. (a) 

 The integral gives the total distance in miles that the plane flies between *t* = 0 and *t* = 40 min.

 (b) Ave. velocity miles per minute.

5. (a) 

 (b) Ave. temp. 

 Ave. temp. 

 (c) . The temperature drops 45°C from the heated

 end of the wire to the other end of the wire.

6. (a) Since the velocity is positive, the integral represents the distance, in feet, traveled by rocket *A*

 from *t* = 10 seconds to *t* = 70 seconds.

 

 (b) Let  be the velocity of rocket *B* at time *t*.

 . . .

  so Rocket *B* is traveling faster at time *t* = 80 seconds.