Calculating Time Constants and Expiratory Time
Use three time constants to calculate the expiratory time

1. Given a static compliance of 30 mL/cm H_2O and a Raw of 25 cm H_2O/L/sec, calculate the following.

   A. 1 time constant = 0.03 L/cm H_2O x 25 cm H_2O/L/sec = 0.75 seconds

   B. Expiratory time = .75 seconds x 3 = 2.25 seconds

2. Given a static compliance of 60 mL/cm H_2O and a Raw of 15 cm H_2O/L/sec, calculate the following:

   A. 1 time constant = 0.06 L/cm H_2O x 15 cm H_2O/L/sec = 0.9 seconds

   B. Expiratory time = 0.9 seconds x 3 = 2.7 seconds

3. Given a static compliance of 20 mL/cm H_2O and a Raw of 20 cm H_2O/L/sec, calculate the following:

   A. 1 time constant = 0.02 L/cm H_2O x 20 cm H_2O/L/sec = 0.4 seconds

   B. Expiratory time = 0.4 seconds x 3 = 1.2 seconds

4. Given a static compliance of 40 mL/cm H_2O and a Raw of 35 cm H_2O/L/sec, calculate the following:

   A. 1 time constant = 0.04 L/cm H_2O x 35 cm H_2O/L/sec = 1.4 seconds

   B. Expiratory time = 1.4 seconds *3 = 4.2 seconds

5. Given a static compliance of 15 mL/cm H_2O and a Raw of 30 cm H_2O/L/sec, calculate the following:

   A. 1 time constant = 0.015 L/cm H_2O x 30 cm H_2O/L/sec = 0.45 seconds

   B. Expiratory time = 0.45 x 3 = 1.35 seconds

6. Given a static compliance of 80 mL/cm H_2O and a Raw of 6 cm H_2O/L/sec, calculate the following:

   A. 1 time constant = 0.08 mL/cm H_2O x 6 cm H_2O/L/sec = .48 seconds

   B. Expiratory time = 0.48 seconds x 3 = 1.44 seconds