1. Write the formula for estimating the oxygen cost of treadmill walking.

2. Write the formula for estimating the oxygen cost of treadmill running.

3. What is the oxygen cost of walking on a treadmill at 2.5 mph and a 3% grade for a 195 lb woman?

4. What is the oxygen cost of running on a treadmill for a 160 lb marathoner who is training indoors at a 7 minute per mile pace at a 1% grade?

5. What is the oxygen cost after increasing the treadmill angle to 5% for 6 minutes at a time for the marathoner above?
6. What is the treadmill grade that elicits an oxygen cost of 50 ml/kg/min for a well trained female runner who weighs 120 lb and is running at a 6 minute and 30 second per mile pace?

7. What is the treadmill speed that elicits an oxygen cost of 2.3 liters/min for a 20 year old college student who weighs 82 kg and who is running at 4% grade?

8. What is the treadmill speed that a walker needs to choose if she wants to consume 15 ml/kg/min of oxygen above the resting amount while walking at a 3% grade?

9. What can you expect to be your oxygen consumption when running on a treadmill at the gym when you set the speed to 8 mph and the grade to 3.5%?

10. How much oxygen (in absolute terms) would you consume over 30 minutes’ time during your running workout at the gym as described above?