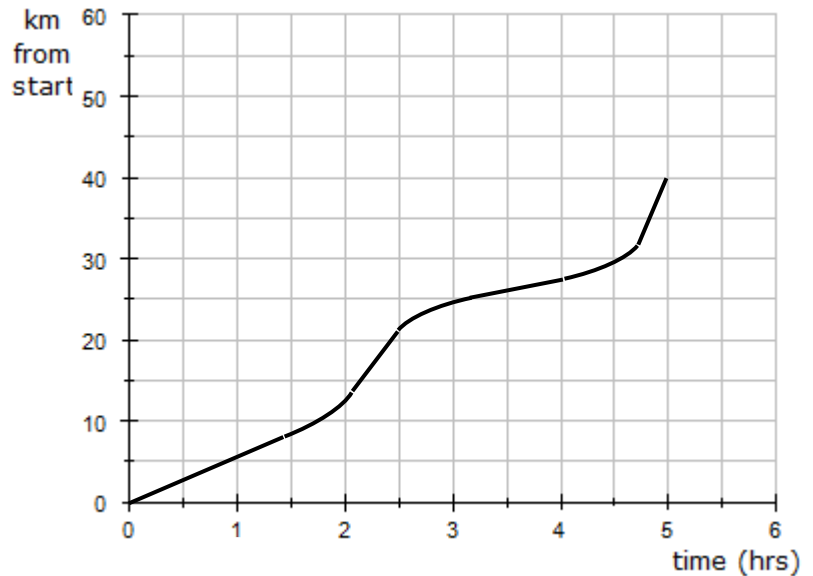# Basic Patterns and Graphs Practice #4

1. a) Plot lines on the graph opposite for the situation where:

   - Bill rides his bike for two hours at 25 km per hour.
   - He rests for one hour.
   - He rides back to the start at 20 km per hour.

km from start (60, 50, 40, 30, 20, 10, 0) vs time (hrs) (0 to 6)

   b) How long is it in total before Bill returns to the start position? ....

   c) What is the average speed of the runner whose distance vs time is shown on the graph? ....
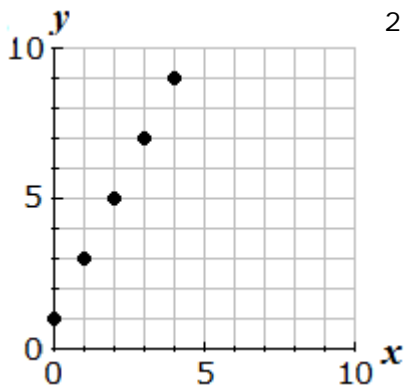
2. a) For the pattern shown to the left, complete the table below:

x	0	1	2	3	4	5	...	10
y								

   b) Give the equation of that pattern: ....

   c) On the same grid, plot the line $y = 5 - x$

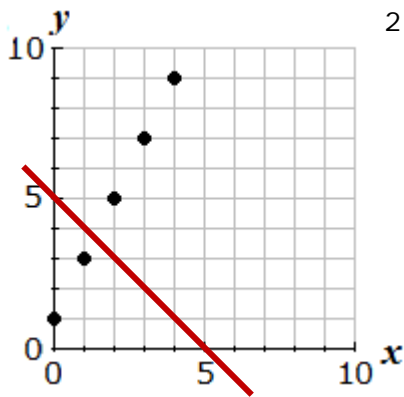3. The graph below shows the temperature in an office building during a working day:

temp (°C) (20, 10) vs time (5:00 to 18:00)
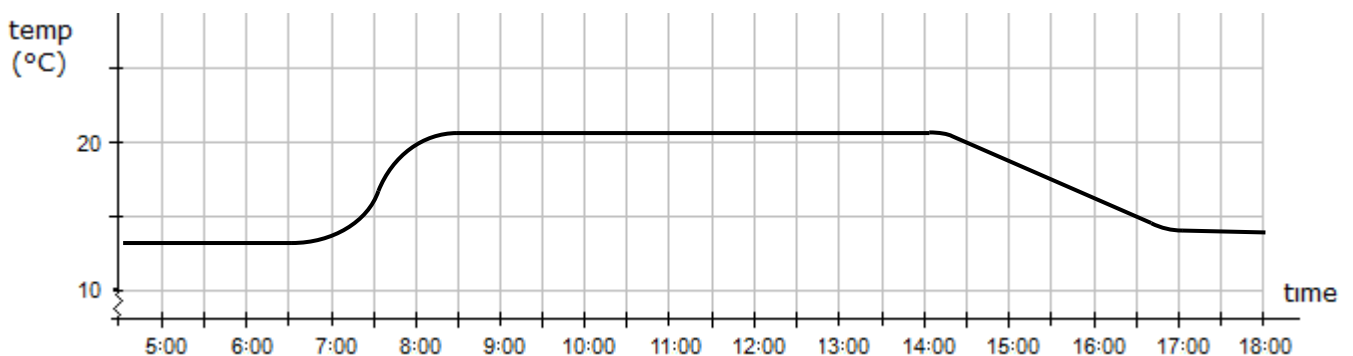
   a) When is the heating turned on in the morning? ....

   b) When is the office heating up at its fastest rate? ....

   a) How fast is the temperature dropping at 15:00? ....

Answers: Basic Patterns and Graphs Practice #4

1. a) Plot lines on the graph
       opposite for the situation
       where:

   - Bill rides his bike for two
     hours at 25 km per hour.

   - He rests for one hour.

   - He rides back to the start at
     20 km per hour.

km from start 60 50 40 30 20 10 0 — time (hrs)
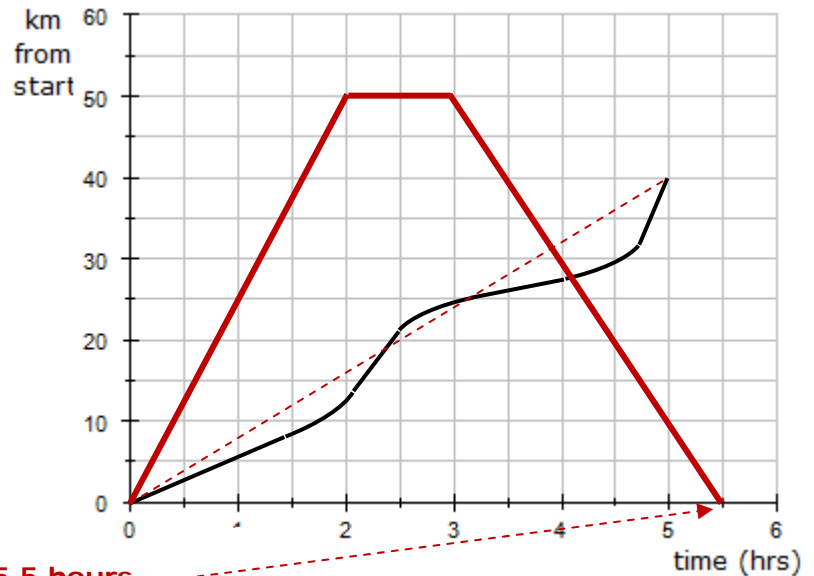
   b) How long is it in total before
       Bill returns to the start position? **5.5 hours**

   c) What is the average speed of the runner whose
   whose distance vs time is shown on the graph? **8 km/hr** (40 km in 5 hours – dotted line)

2. a) For the pattern shown to the left, complete the table below:

x	0	1	2	3	+2 4	+2 5	...	10
y	**1**	**3**	**5**	**7**	**9**	**11**		**21**

   b) Give the equation of that pattern: **$y = 2x + 1$**

   c) On the same grid, plot the line $y = 5 - x$ **shown**

3. The graph below shows the temperature in an office building during a working day:

temp (°C) 20 10 — time
5:00 6:00 7:00 8:00 9:00 10:00 11:00 12:00 13:00 14:00 15:00 16:00 17:00 18:00
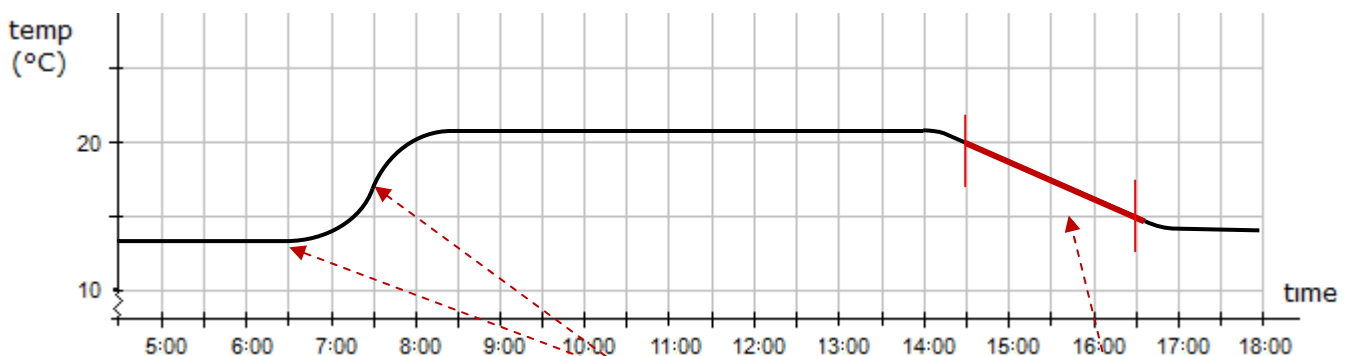
   a) When is the heating turned on in the morning? **6:30 a.m.**

   b) When is the office heating up at its fastest rate? **7:30 a.m.** (when graph is steepest)

   a) How fast is the temperature dropping at 15:00? **2.5 degrees an hour** (⁻5 in 2 hrs)