Extension Patterns and Graphs Practice #1

1. a) Write the equation, in terms of \( n \), for the pattern: 2, 7, 12, 17, ...:

b) Write the equation, in terms of \( n \), for the pattern: 80, 70, 60, 50, ...:

2. a) Write the first 5 terms for the formula \( t_n = \frac{1}{2}n + 3 \):

b) Write the first 5 terms for the formula \( t_n = 2^n \):

3. On the grid:
   a) Draw the graph of \( y = (x + 4)(x + 2) \)
   b) Draw the graph of \( y = 4x - x^2 - 3 \)

4. Write the equations for the graphs shown:
   a) ........................................................
   b) ........................................................
   c) ........................................................

5. On the grid:
   a) Draw the graph of \( 2x + y = 8 \)
   b) Draw the graph of \( 3x - 4y = 12 \)
Answers: Extension Patterns and Graphs Practice #1

1. a) Write the equation, in terms of \( n \), for the pattern: 2, 7, 12, 17, ...: \( t_n = 5n - 3 \)
   b) Write the equation, in terms of \( n \), for the pattern: 80, 70, 60, 50, ...: \( t_n = 10n + 90 \)

2. a) Write the first 5 terms for the formula \( t_n = \frac{1}{2}n + 3 \): 3.5, 4, 4.5, 5, 5.5
   b) Write the first 5 terms for the formula \( t_n = 2^n \): 2, 4, 8, 16, 32

3. On the grid:
   a) Draw the graph of \( y = (x + 4)(x + 2) \)
   b) Draw the graph of \( y = 4x - x^2 - 3 \)

4. Write the equations for the graphs shown:
   a) \( y = (x + 6)(x + 4) \) or \( y = (x + 5)^2 - 1 \)
   b) \( y = -(x - 3)^2 \) or \( y = -(x - 3)(x - 3) \)
   c) \( y = (x - 5)^2 + 2 \)

5. On the grid:
   a) Draw the graph of \( 2x + y = 8 \)
   b) Draw the graph of \( 3x - 4y = 12 \)