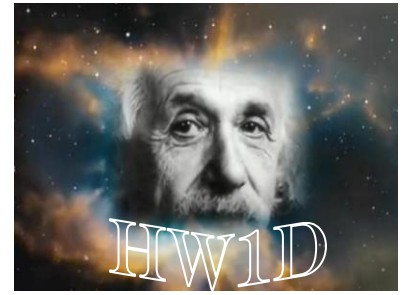1) If $f(x) = \dfrac{3}{4}x - \dfrac{1}{2}$,　　　(a) Find $f(2)$ and $f(-2)$.

　　　　　　　　　　　　(b) Find the zero of f.

2) If $C(n) = 20 - \dfrac{5}{8}n$,　　　(a) Find $C(0)$ and $C(16)$

　　　　　　　　　　　　(b) Find the zero of C.

3) Let $f(x) = 3x - 7$.

　　Prove (or disprove) $f(2) + f(6) = f(8)$.

4) Let $h(t) = \dfrac{9 - 4t}{2}$.

　　Prove (or disprove) $h(4.5) - h(3.5) = h(1)$.

5) Consider the constant functions: $g(x) = 2$ and $h(x) = -1$.
　　　　(a) Graph the functions.
　　　　(b) What are their slopes?

6) Consider the constant function: $P(x) = -0.5$
　　　　(a) Find $P(689.75)$.
　　　　(b) Does the P have any zeros? Explain.

7)(a) What is the slope of the graph of $f(x) = 1.5x - 2$?
　(b) What is the zero of f?
　(c) What are the intercepts of the graph?

8)(a) What is the slope of the graph of $C(t) = 80t + 5.2$?
　(b) Where does the graph of C intersect the vertical axis?

9) Let f be a linear function such that $f(1) = 5$ and $f(3) = 9$
　　　　(a) Sketch the graph of f.
　　　　(b) Find an equation for $f(x)$.

10) Let g be a linear function such that $g(-1) = -3$ and $g(-4) = 12$.
　　　　(a) Sketch the graph of g.
　　　　(b) Find an equation for $g(x)$.

11) Bill bikes 4km to school. After 5 min. he is 3.2km from the school. The graph of the function that models Bill's distance to school is shown in red. Because of hills and traffic conditions along the way, Bill's speed varies. Nevertheless, a linear function whose graph is shown in blue can also be used to model his distance as a function of his time spent bicycling.
　　　　(a) Give an equation of the linear function.
　　　　(b) Use the equation to find approximately how lone it takes Bill to bike to school.

$D(t)$
(0, 4)
(5, 3.2)
distance from school (km)
time (min)
t
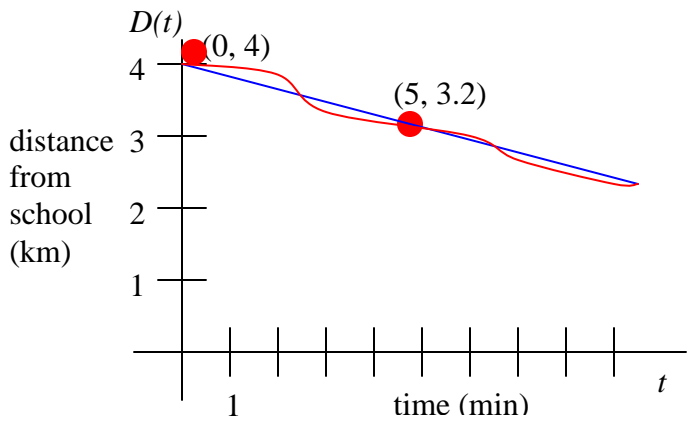
12) Maria Farria's new car costs $480 per month for car payments and insurance. She estimates that gas and maintenance cost will be $1.75 per mile.

    (a) Express her total monthly cost as a function of the miles driven during the month.
    (b) What is the slope of the graph of the cost function?

13) A taxi cab driver charges $5 for the first half of a mile driven and $0.55 for each additional quarter mile. The fare is a function of the distance traveled.

    (a) Write an equation for this linear function.
    (b) Determine the cost of a 12 mile trip.

1a) 1; -2	6a) -0.5	8a) 80	12a) C(m) = 1.75m + 480
b) 2/3	b) no, 0 = -0.5	b) (0, 5.2)	b) 1.75
2a) 20; 10	has no solution	9a) See Mr. Paull	13a) answers may vary
b) 32	7a) 1.5	b) $f(x) = 2x + 3$	b) $11.33
3) no	b) 4/3	10a) See Mr. Paull	
4) no	c) x-int = 4/3	b) $g(x) = -5x - 8$	
5a) See Mr. Paull	y-int = -2	11a) $D(t) = -0.16t + 4$	
b) 0		b) about 25 min.	