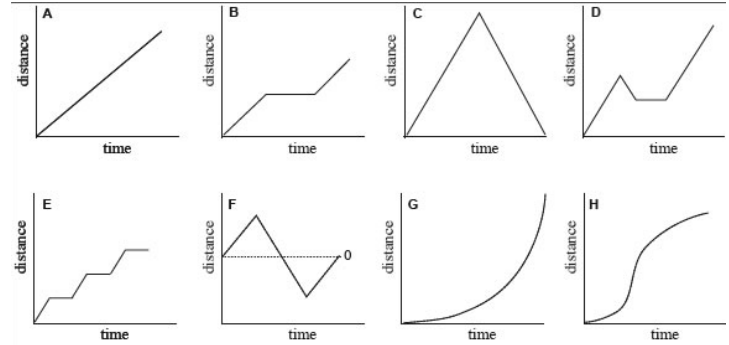


## EAA admissions test grade 4 (basics)

1) Identify the graph which matches each of the following stories:

1: I walked at a steady rate in the same direction for a while until I met a friend. I then stopped to chat with her. After some time I walked forth at the same rate until I reached my destination.



2: I started out slowly but then I realized that I will be late, so I had to walk faster and faster in order to reach my destination on time.

3: I ran out of home until I realized that I had lost my key. I then ran back to where I thought I have dropped it and looked for it until I found it. Then I ran again with the same speed and in the same direction as before until I reached my destination.

Answer: 1 .....

2 .....

3 .....

/3

2) Find the domain of this equation and then solve it!

/7

$$\frac{4-x}{3-x} - \frac{1}{2} = \frac{x-2}{3-x} \quad x \in \mathbb{R}$$

3) Factorise and reduce these expressions to the lowest terms:

(1)  $\frac{6xy - x^2}{6y^2 - xy} =$

/3

(2)  $\frac{a^2 + 6a + 9}{a^2 - 9} =$

/4

4) Simplify and reduce your answer to the lowest terms:

$$\left(4 - \frac{1}{x^2}\right) : \left(2 + \frac{1}{x}\right) =$$

/6

5) Factor out all common factors and simplify as much as possible:

$$6(1+3a)^2 - 3(a-4)(1+3a) =$$

/5

6) A tile has the shape of a rhombus ABCD ( $\alpha < 90^\circ$ ) where side  $a = 70$  cm, perpendicular height  $h = 56$  cm.

/8

Draw a labelled sketch and find the length of the diagonals  $e$  and  $f$  and the area  $A$  of the tile.

Give all your answers correct to whole cm.

**Total score: ..... marks out of 36 marks**