

IB SL MATHEMATICS

REVIEW PACKET #3

1. Paula goes to work three days a week. On any day, the probability that she goes on a red bus is $\frac{1}{4}$.

- (a) Write down the expected number of times that Paula goes to work on a red bus in one week.

(2)

In one week, find the probability that she goes to work on a red bus

- (b) on exactly two days;

(2)

- (c) on at least one day.

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(3)

(Total 7 marks)

2. Let $f(x) = 3x - e^{x-2} - 4$, for $-1 \leq x \leq 5$.

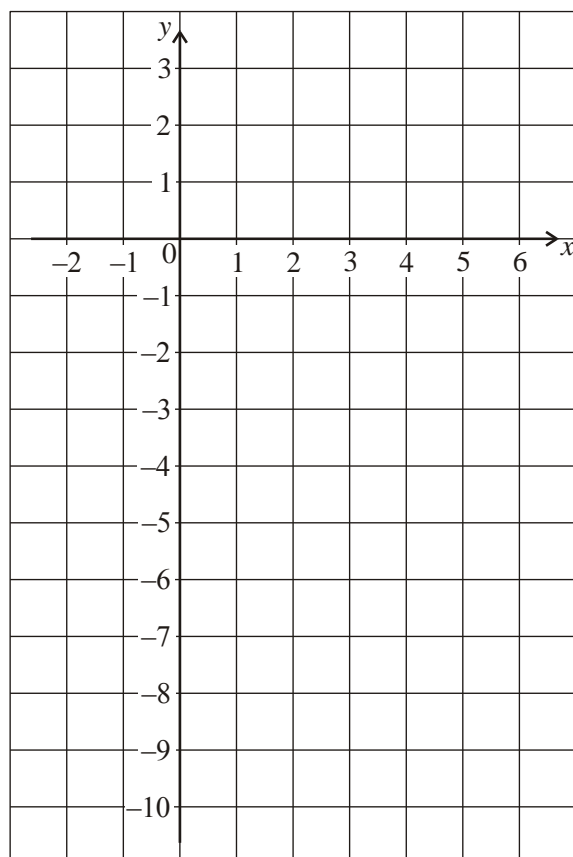
- (a) Find the x -intercepts of the graph of f .

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(3)

- (b) On the grid below, sketch the graph of f .



(3)

- (c) Write down the gradient of the graph of f at $x = 2$.

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(Total 7 marks)

3. Consider the function $f(x) = 4x^3 + 2x$. Find the equation of the normal to the curve of f at the point where $x = 1$.

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(Total 6 marks)