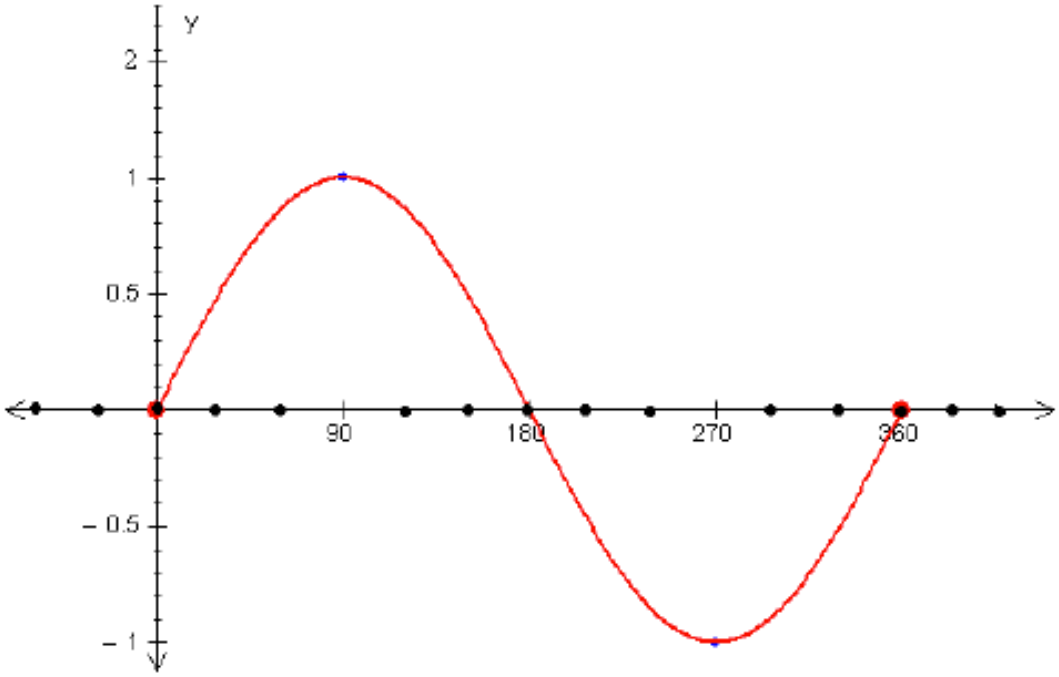
NAME:_____ **Paper Prev 4B: Trig Functions** **DATE: 11/16/2017**

1. [Maximum mark: 4]

[SL non-calc]

The graph of f(x) = Sin x, $0 \leq x \leq 2\pi$

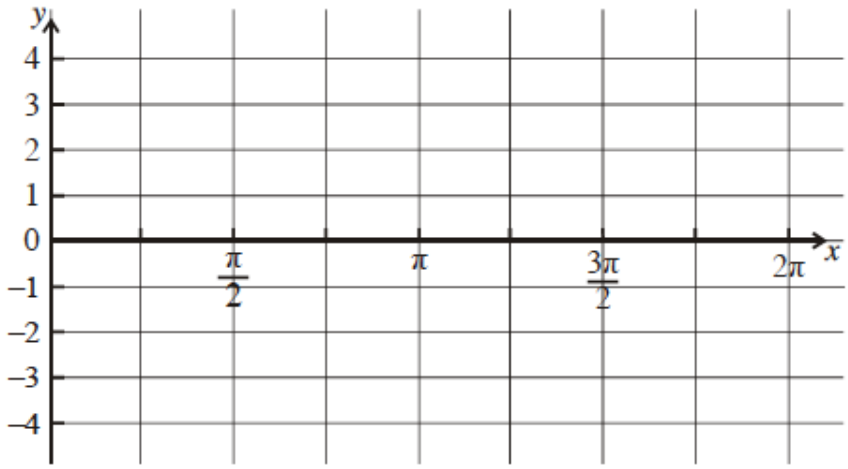
Sketch the graph of $h(x) = -f(x - \frac{\pi}{6}) + \frac{1}{2}$



2)) Consider $g(x) = 3 \sin 2x$. *[SL non-calc]*

(a) Write down the period of g.

(b) On the diagram below, sketch the curve of g, for $0 \leq x \leq 2\pi$.



(c) Write down the number of solutions to the equation $g(x) = 2$, for $0 \leq x \leq 2\pi$.

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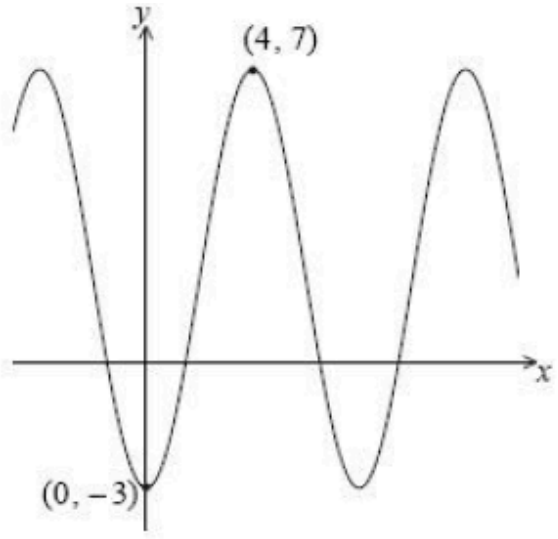
3.) The graph of $y = p\cos qx + r$, for $-5 \le x \le 14$, is shown below.

[SL non-calc]



There is a minimum point at (0, –3) and a maximum point at (4, 7).

(a) Find the value of

(i) p;

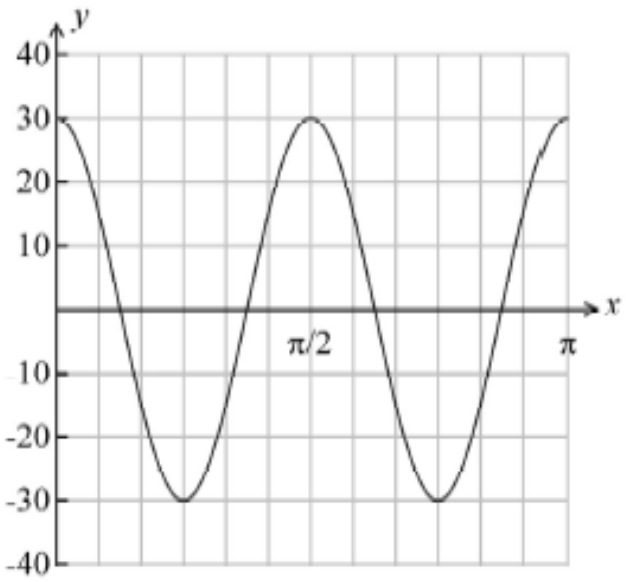
(ii) q;

(iii) r.

(6)

4) The graph of a function of the form $y = p\cos qx$ is given in the diagram below.

[SL non-calc]



(a) Write down the value of p.

(b) Calculate the value of q.

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5.) Let $f(x) = 3\sin x + 4\cos x$, for $-2\pi \leq x \leq 2\pi$.

[SL-calc]

(a) Sketch the graph of f.

(3)

(b) Write down

(i) the amplitude;

(ii) the period;

(iii) the x-intercept that lies between $-\frac{\pi}{2}$ and 0.

(3)