1MG Level 2	**TRIGONOMETRY**	TEST - B
2017-03-24	80mn	Name:_____

With calculator. Indicate your computations   / 43 pts

EXERCISE 1   [/4]

A point P_α in Q_{II} is such that $\tan(\alpha) = -3$.
Without determining α, compute the exact value of $\cos(\alpha)$, $\sin(\alpha)$ and $\cot(\alpha)$.
Clearly represent these four measures on a drawing

EXERCISE 2   [/7]

1) Give the polar coordinates of the point $(-8; 6)$

2) Thanks to a clear drawing fill the blank with two different angles values

   $\cos(90° - x) = -\sin(\underline{\quad})$

3) Compute the exact value of $\cos(15°)$ using the *subtraction formula*.

EXERCISE 3   [/12]
Give all the answers of the following equations.

1) $\sin(3x) = \sin(x + 10°)$

2) $\sin(2x) - 7\cos(2x) = 0$ (in radians)

3) $\sin(x) - 3\cos(x) = 1$

EXERCISE 4   [/5]

A cable is stretched between Brighton and Le Havre, under the water.
The distance between these towns is 130km, following a meridian.

We assume that the radius of the earth is 6378km

Determine: a) the length of the cable (in km with 3 digits)
             b) the maximal depth of that cable under the water (meters)

Start by illustrating the situation. .

EXERCISE 5   [/4]

A cylindrical tower with radius $r = 15m$ is observed from a point P placed at $30m$ from
the centre of the tower. Determine what part of its perimeter can be seen from P.
Start by illustrating the situation.

EXERCISE 6   [/6]

A triangle is given by $a = 4, b = 5$ and $\gamma = 25°$.
Draw it and compute its unknown dimensions: α, β, c and its area.

EXERCISE 7   [/5]

Here is the graph of part of a trigonometric function. Which one? Answer : $f(x) = sin(x)$

Write the values of one tick on each axis and continue the drawing on the whole x-axis
given.