

LDDR- Niveau 2 : TE 7 – Trigo

Exercise 1. / 3

Give the exact value of

$\cos\left(\frac{\pi}{2}\right) =$	$\tan(-45^\circ) =$
$\sin\left(\frac{2\pi}{3}\right) =$	$\cos(585^\circ) =$

Exercise 2. / 4

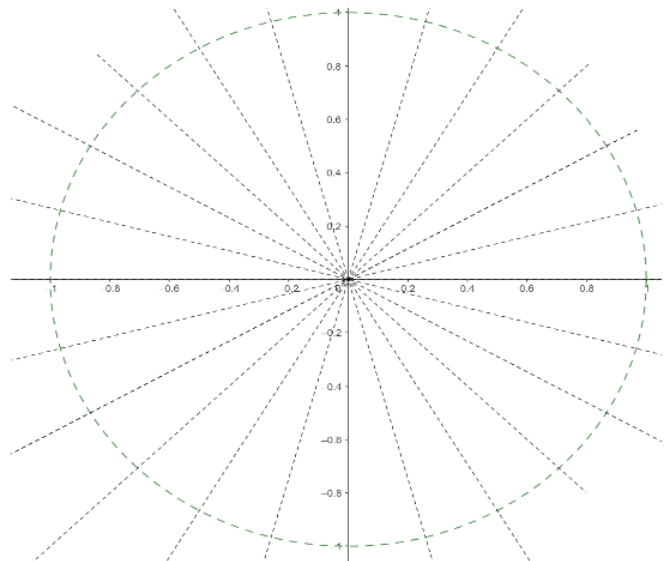
Determine the exact value of $\cos(x)$, $\tan(x)$ and $\cot(x)$ given that $\sin(x) = -\frac{3}{5} = -0.6$ and that the point P_x is in quadrant IV . Indicate your computations.

Exercise 3. / 4

a) Give in radians all the solutions of the equation $\cot(x) = 0$

b) Clearly represent on the following circle with different colors :

$\sin(60^\circ)$, $\cos(150^\circ)$ and $\tan(-120^\circ)$



Exercise 4. / 6

Solve the equations a) $2 + 4\cos(3x) = 0$ and b) $\sin(x - 10^\circ) = \sin(-2x)$

Exercise 4. / 6

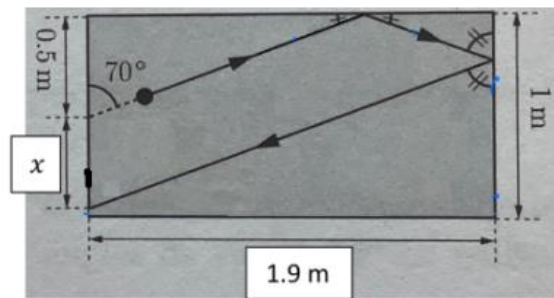
Solve the equations a) $1 - 2\cos(4x) = 0$ and b) $\sin(2x + 10^\circ) = \sin(-x)$

Exercise 5. / 5

- a) Determine the acute angle between the y -axis and the line passing through the points $(-3; 7)$ and $(1; -3)$.
- b) Give the equation of the steeper line that passes through the point $(3; 1)$ and forms an angle of 40° with the line $y = x$.

Exercise 6. / 4

Here is a top view of a billard table.
Determine with justifications the measure of the length x on the following situation.



Use the basic trigonometric relations to show that

$$\tan(x) \cdot \cot(x) = \frac{1}{1 - \sin^2(x)}$$

Exercise 7. / 3

Use the basic trigonometric relations to show that

$$\tan^2(x) + \tan(x) \cdot \cot(x) = \frac{1}{1 - \sin^2(x)}$$

Exercise 8. / 4

Determine the area of a regular 12-gon inscribed in a circle with radius 10.
Justify and round your answer to two digits.