

## LDDR- Niveau 1 : TE 12 – Trigo - GP

### Trigonometry

- 1) Solve the equation  $\sin(x) = 3\cos(x)$   
Only give the solutions in the interval  $[0^\circ; 360^\circ]$ .
- 2) Give all the solutions of  $\tan^2(x) = 1$ , in the unit radians (*in the form of multiples of  $\pi$* ).
- 3) If your family name starts with...  
... a vowel : Solve the equation  $\sin(4x - 20^\circ) = 0$  Give all the solutions  
... a consonant : Solve the equation  $\sin(3x + 30^\circ) = 0$  Give all the solutions

### Plane geometry

#### Exercise 1

Draw the vectors  $\vec{a}$  (length 6cm),  $\vec{b}$  (length 5cm) and  $\vec{c}$  (length 3cm) : they must have different directions !

Decompose the vector  $\vec{a}$  in the basis  $(\vec{b}; \vec{c})$

... and estimate *as precisely as possible* the linear combination  $\vec{a} = \dots \vec{b} + \dots \vec{c}$

#### Exercise 2

Draw the vectors  $\vec{a}$  and  $\vec{b}$  : they must have different lengths and different directions.

Draw the vector  $\frac{3}{5}\vec{a} - \sqrt{3}\vec{b}$ . Don't erase the *construction lines*.

#### Exercise 3

*Computations.*

Decompose the vector  $\vec{a} = \begin{pmatrix} 5 \\ -7 \end{pmatrix}$  in the basis  $(\vec{b}; \vec{c})$  with  $\vec{b} = \begin{pmatrix} 3 \\ -7 \end{pmatrix}$  and  $\vec{c} = \begin{pmatrix} -2 \\ 6 \end{pmatrix}$ .

Write the answer and the computations.