



ANALYTIC GEOMETRY AND TRIGONOMETRY

4° ESO

Exercise 1: (2 ptos)

- Find the symmetric of the point $A(1,2)$ with respect to the point $P(5,-1)$
- Given the vectors $\vec{u} = (2,3)$, $\vec{v} = (-1,4)$ and $\vec{w} = (7,5)$ write \vec{w} as a linear combination of \vec{u} and \vec{v}

Exercise 2: (2.25 ptos)

- Given the points $P(k+4,3)$, $Q(7,k+3)$ and $R(6k,1)$ find the value of k so that the triangle that they form is isosceles in P (1.5)
- Find the value of m so that the triangle formed by the points $A(2,3)$, $B(7,4m)$ and $C(m+2,-2)$ has a right angle in A (0.75)

Exercise 3: (0.75 ptos) Given the straight line $r \equiv \begin{cases} x = 2 + 5t \\ y = 1 + 2t \end{cases}$ find the **general** equation of:

- A parallel line r' going through the point $A(4,-3)$
- A perpendicular line r'' going through the point $B(5,-1)$

Exercise 4: (1 pto) Find the parametric and continuous equations of the straight line given by $r \equiv 2x + 7y - 9 = 0$

Exercise 5: (1 pto) Given the vectors $\vec{u} = (2,3)$ and $\vec{v} = (-1,4)$ find a third vector \vec{w} so that $\vec{u} \perp \vec{w}$ and $\vec{v} \cdot \vec{w} = 33$

Exercise 6: (1 pto) Find the general equation of the straight line that goes through the points $A(3,-5)$ and $B(2,1)$

Exercise 7: (1 pto) If $\cos \alpha = 0.57$ and $\frac{3\pi}{2} < \alpha < 2\pi$ find the values of $\sin \alpha$, $\tan \alpha$ and α

Exercise 8: (1 pto)

- Turn $\frac{13\pi}{12}$ and $\frac{13\pi}{9}$ into degrees
- Turn 75° and 210° into radians

