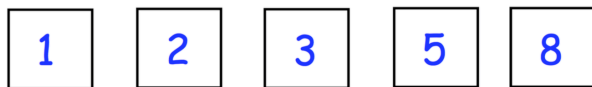




A circle has a radius of 3 and centre (0, 0)

Write down the equation of the circle.

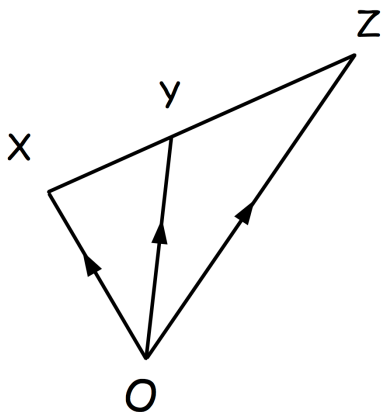
Navid makes 5-digit numbers using all of the number cards below.



How many different numbers less than 70000 can he make?

The line with equation $y = 3x + 5$ passes through the points $A(-4, -7)$ and $B(0, 5)$

Find the equation of the line that passes through the midpoint of AB and it perpendicular to $y = 3x + 5$.



$$\vec{OX} = 5\mathbf{a} + \mathbf{b} \quad \vec{OY} = 7\mathbf{a} - \mathbf{b}$$

XYZ is a straight line such that $XY : YZ = 3:4$

Find the vector

$$\vec{XY}$$

in terms of \mathbf{a} and \mathbf{b}

Find the vector

$$\vec{OZ}$$

in terms of \mathbf{a} and \mathbf{b}