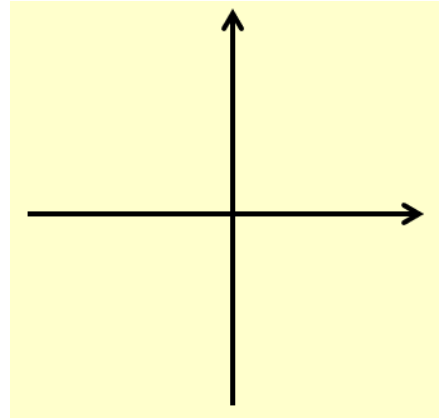


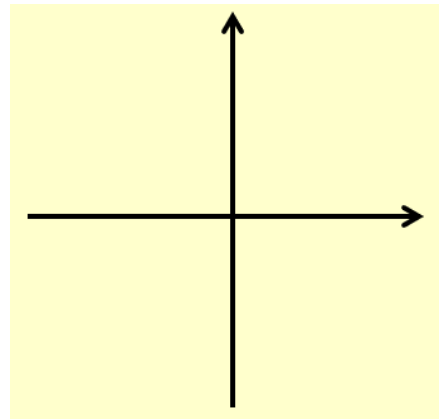
5B Polar Graphs

1. Sketch the Polar equation:

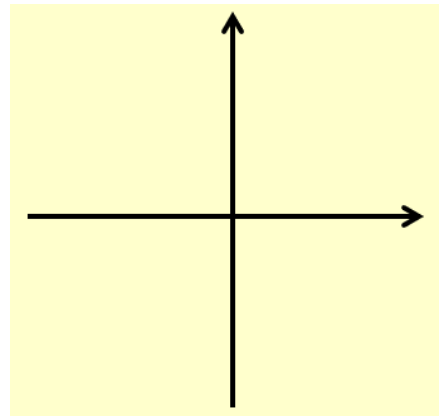
a) $r = a$



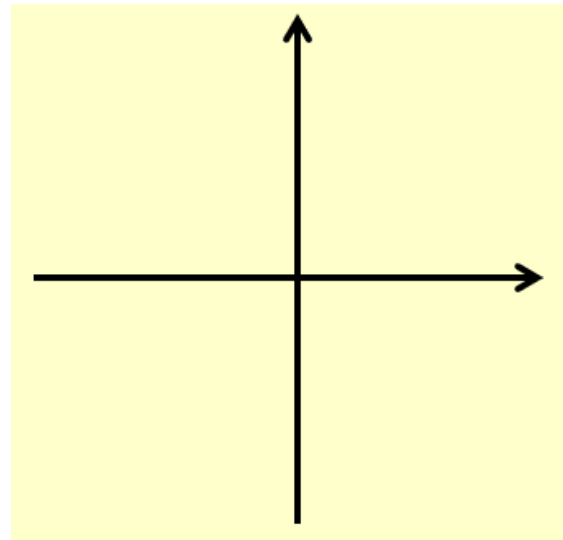
b) $\theta = a$



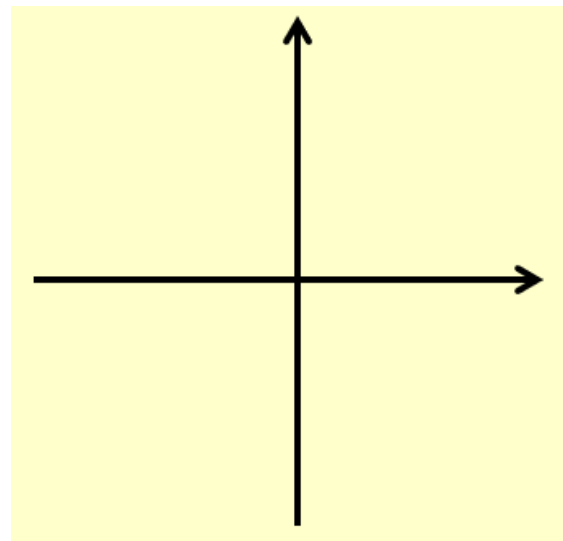
c) $r = a\theta$



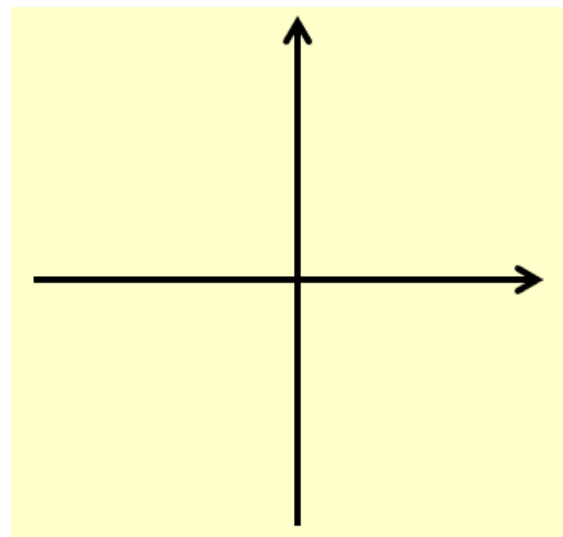
d) $r = a(1 + \cos\theta)$



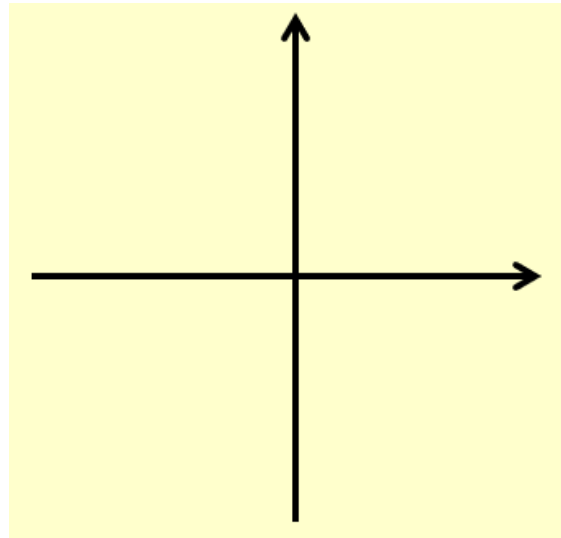
e) $r = a \sec\theta$



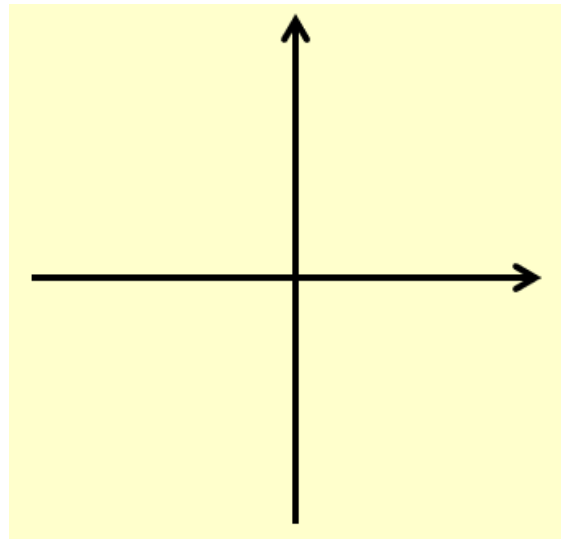
f) $r = \sin 3\theta$



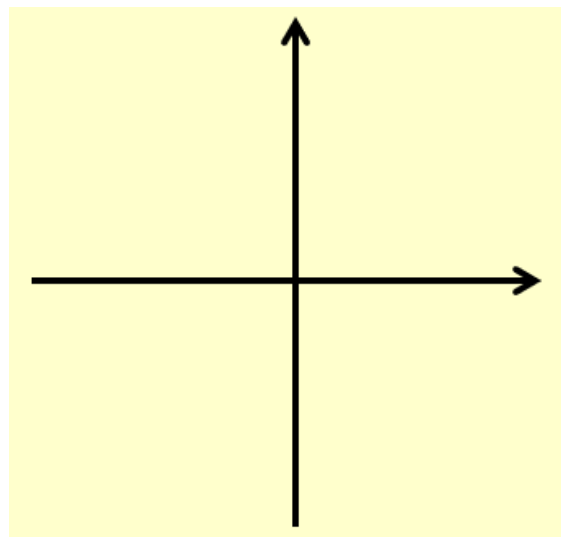
g) $r^2 = a^2 \cos 2\theta$



h) $r = a(5 + 2\cos\theta)$



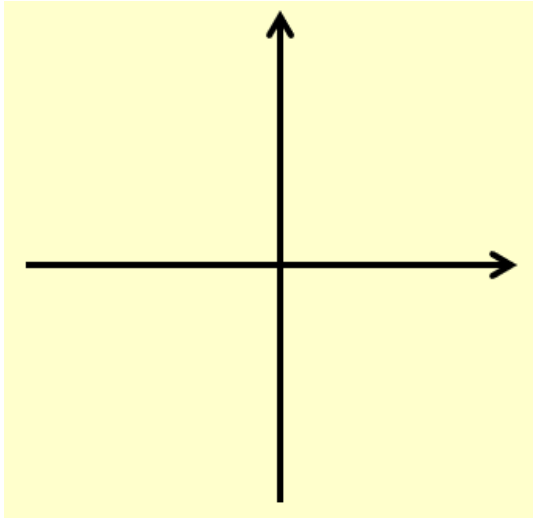
i) $r = a(3 + 2\cos\theta)$



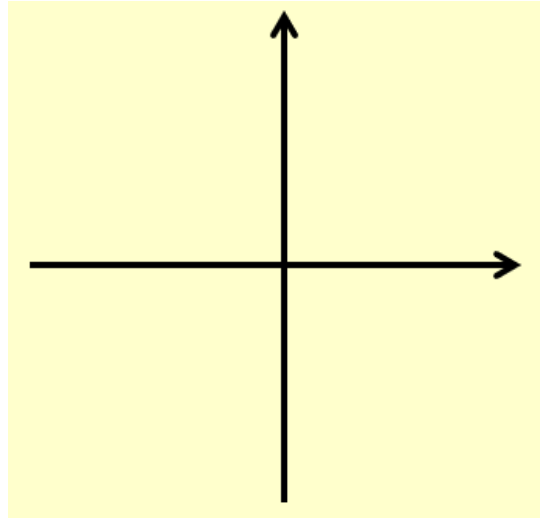
In General

$$r = a(p + q\cos\theta)$$

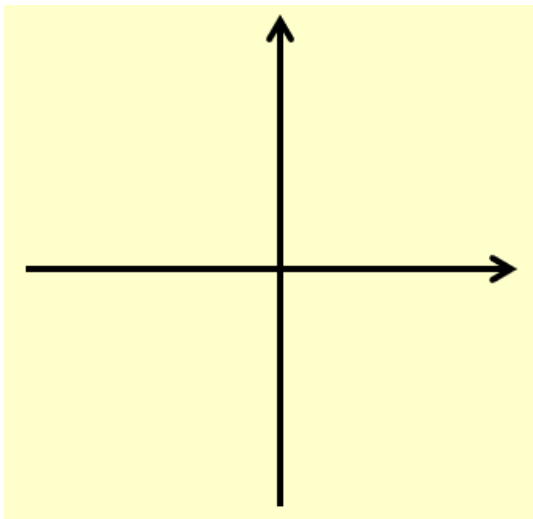
$$p < q$$



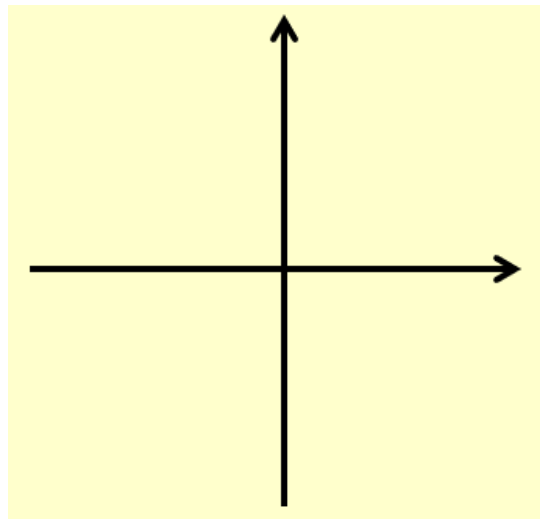
$$q \leq p < 2q$$



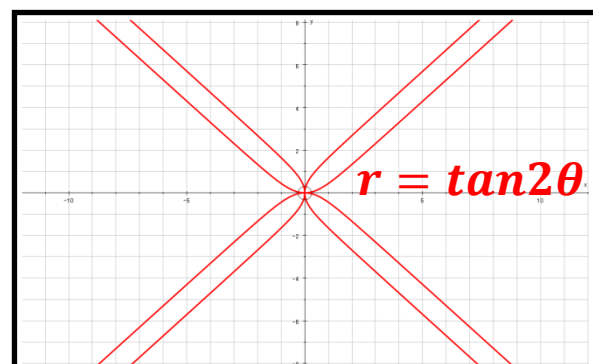
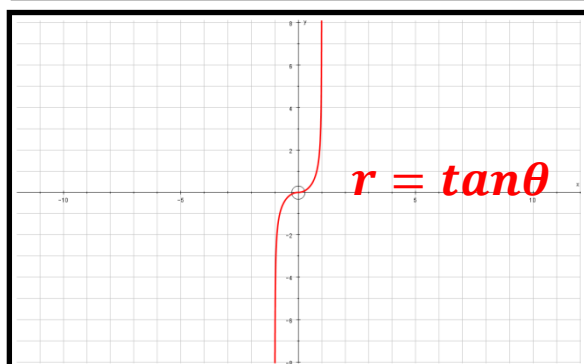
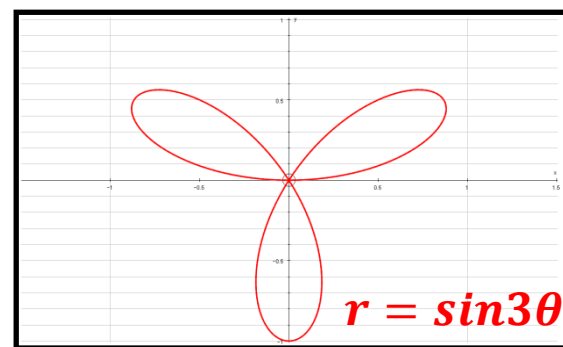
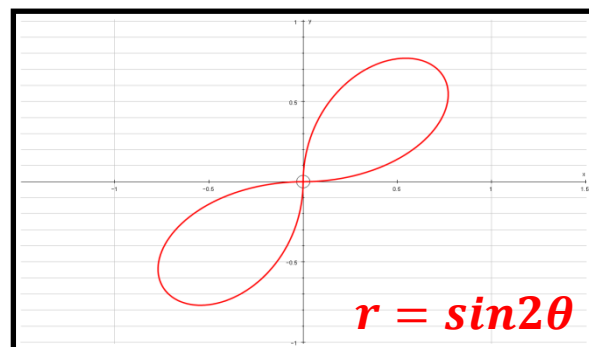
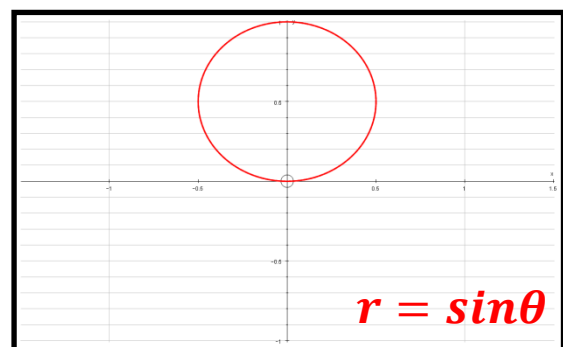
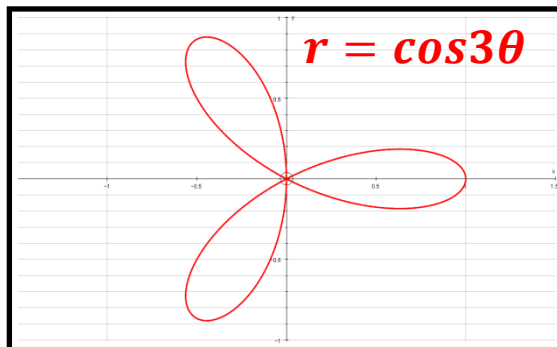
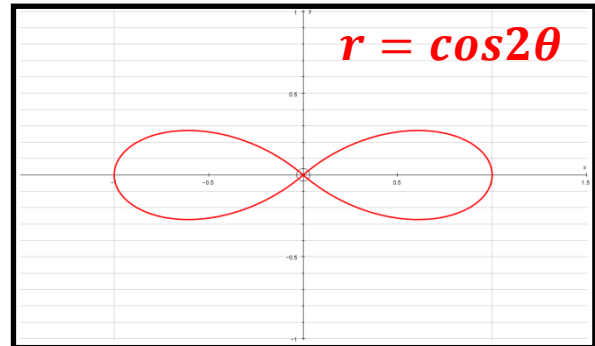
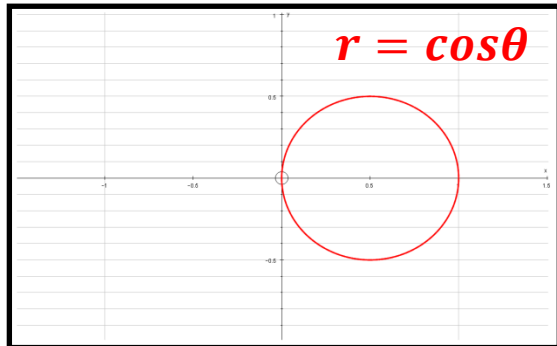
$$p = q$$

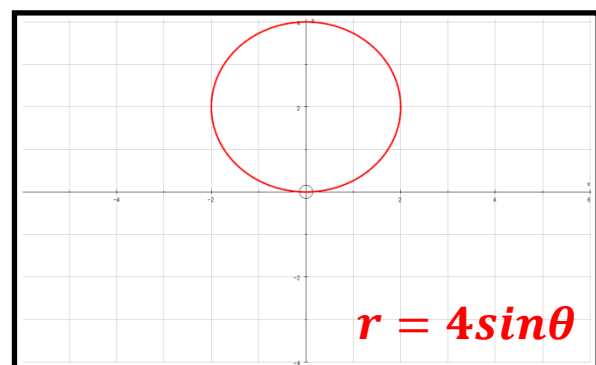
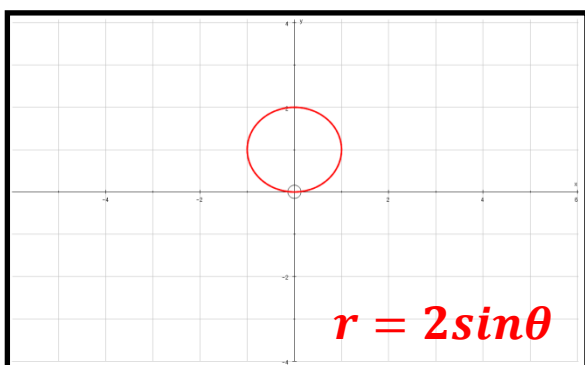
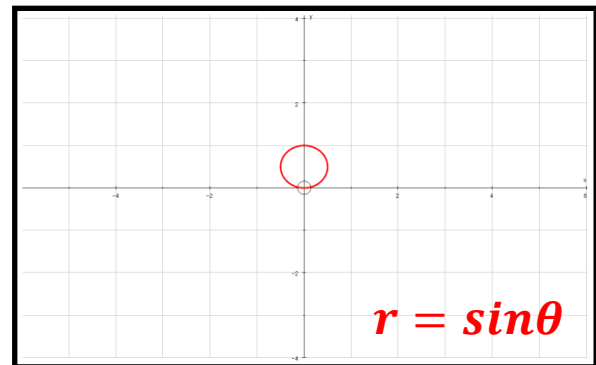
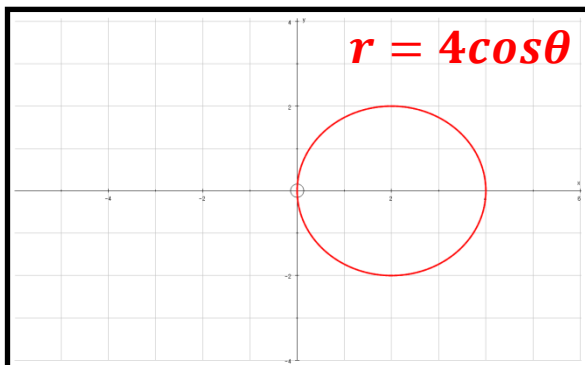
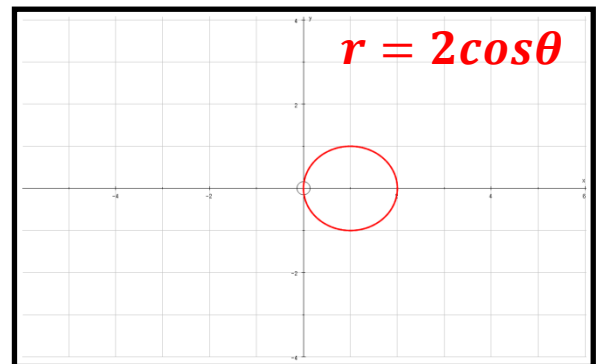
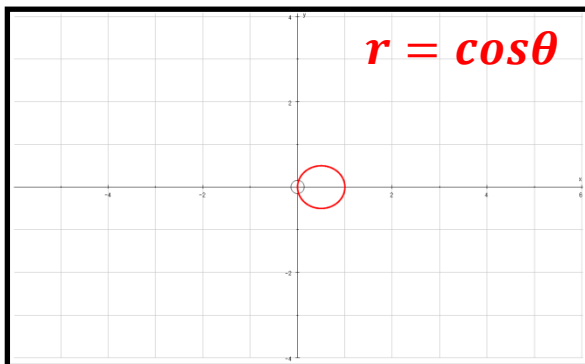
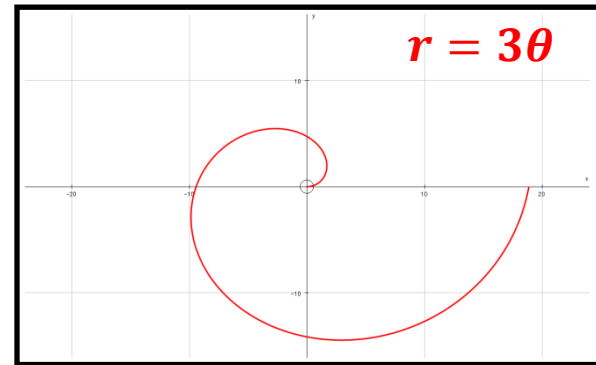
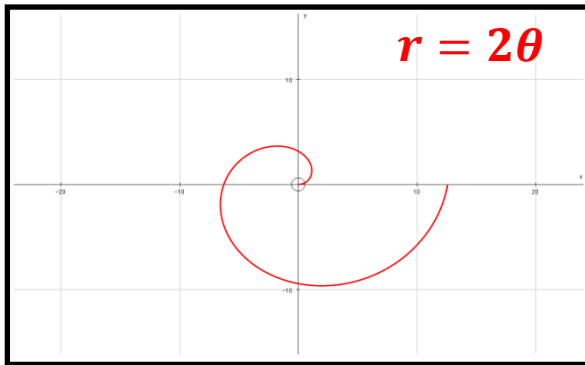
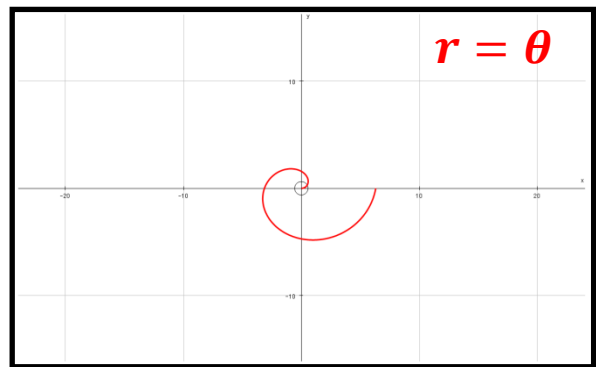
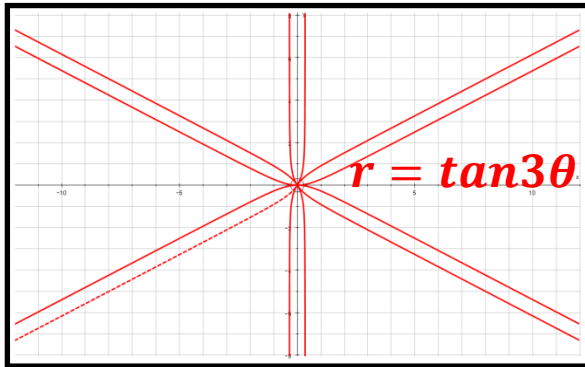


$$p \geq 2q$$



Some graphs to recognise:

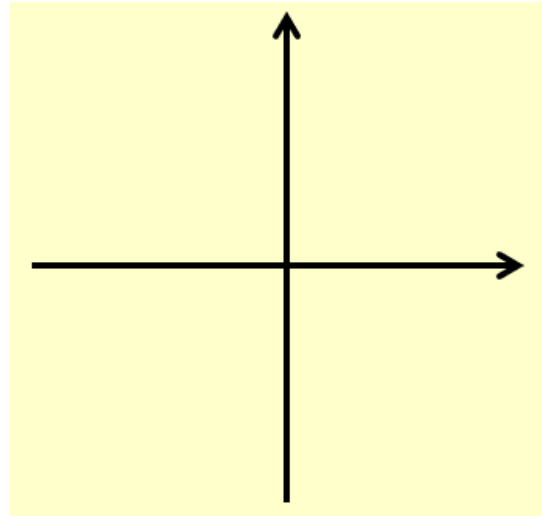




2.

a) Show on an argand diagram the locus of points given by the values of z satisfying:

$$|z - 3 - 4i| = 5$$



b) Show that the locus of points can be represented by the polar curve:

$$r = 6\cos\theta + 8\sin\theta$$