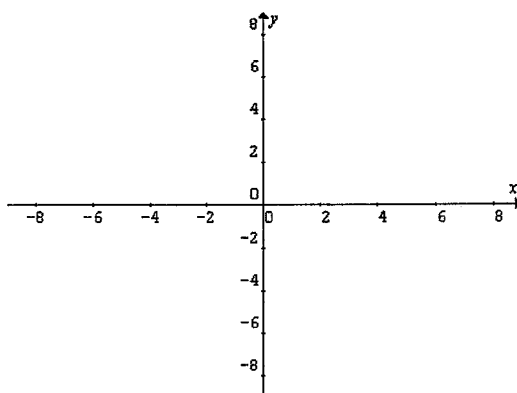
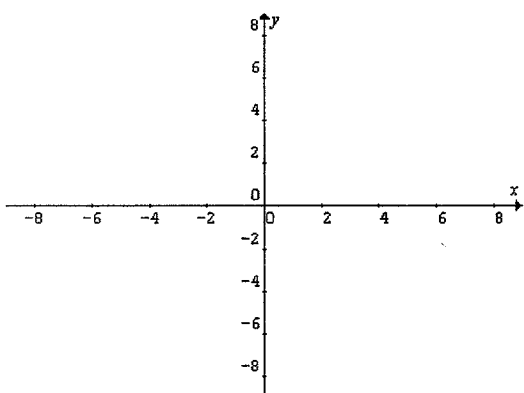


REVIEW EXERCISES – Week 4b

(A) Sketch the graphs of each of the following equations, showing all relevant information: (including x & y -intercepts and any asymptotes)

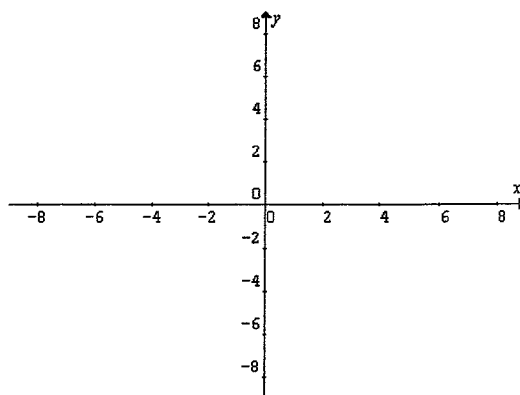
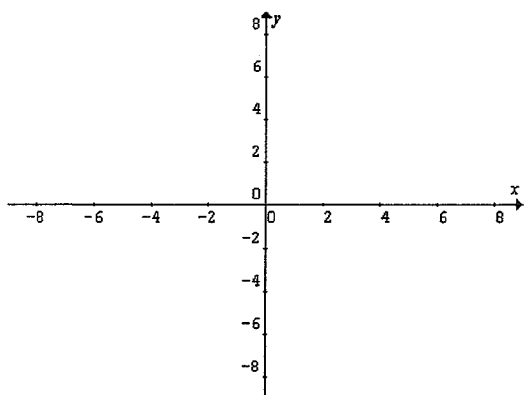
1. $(x-3)^2 + y^2 - 4 = 0$

2. $x^2 + y^2 - 4x + 6y + 9 = 0$



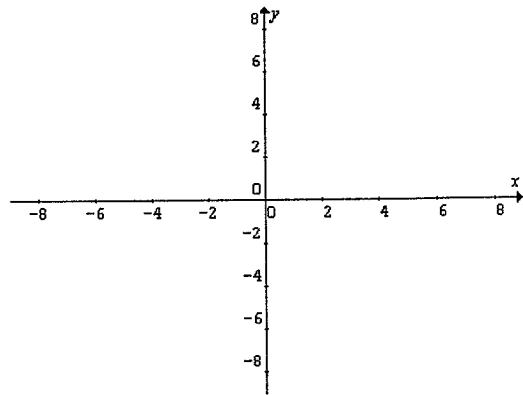
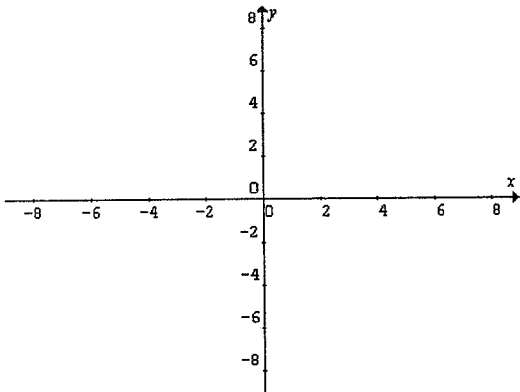
3. $x = 4 - y^2$

4. $y = \frac{1}{x-2}$



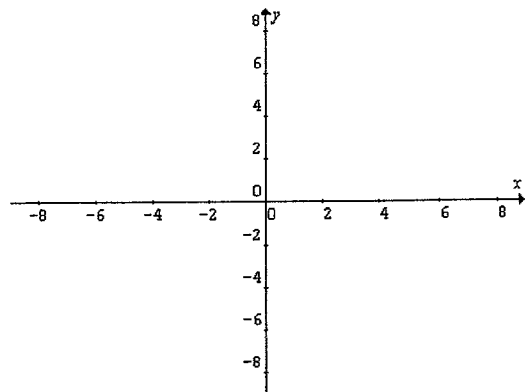
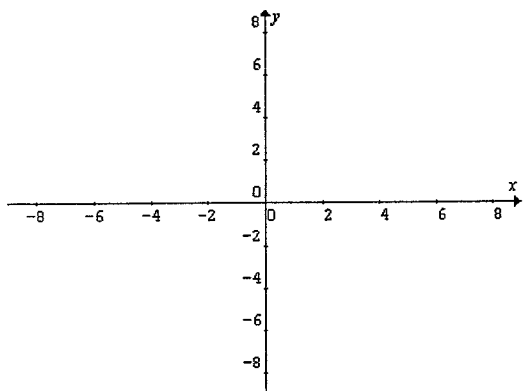
5. $y = \frac{1}{x} - 2$

6. $(x-2).(y+3) = 4$



7. $y = 3^{-x} - 1$

8. $y = 3 - 2^x$



Further Exercises – Week 4 Tutorial 2

(A) Find the equation of the following circles:

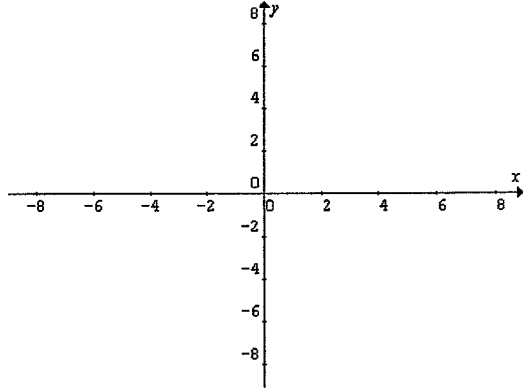
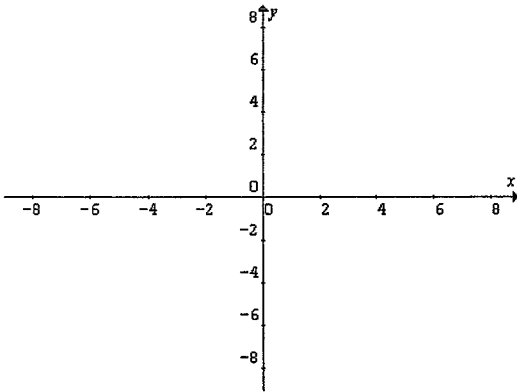
- (i) Centre $C = (2, -3)$; with radius $r = 4$ (ii) Centre $C = (-4, 0)$; with radius $r = \frac{1}{2}$

- (iii) Centre $C = (2, -1)$ and passing through the point $P = (5, -5)$

(B) Sketch the graphs of each of the following polynomial equations, (give the x -intercepts)

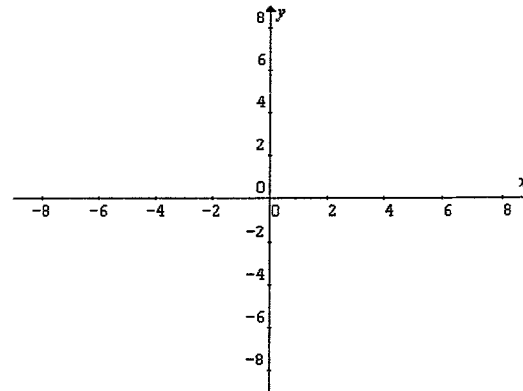
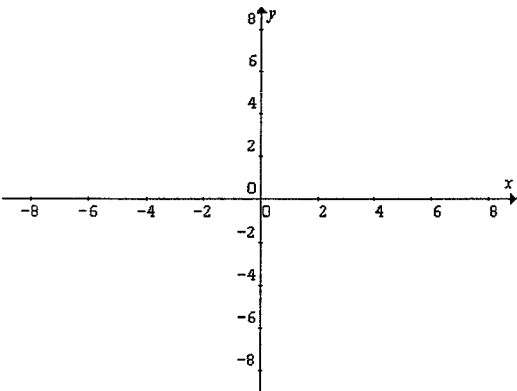
i) $y = x^3 - 2x^2 - 3x$

ii) $y = 9x - x^3$



iii) $y = x(x - 2)(x + 1)(x - 1)$

iv) $y = x(2 - x)(x + 1)(x + 3)$



Answers: (A)

(i) $(x-2)^2 + (y+3)^2 = 16$

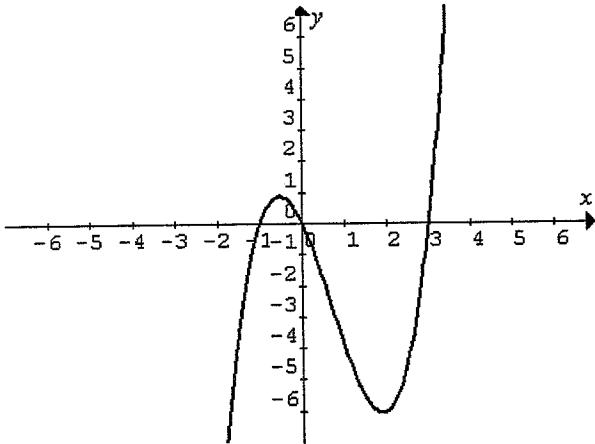
(ii) $(x+4)^2 + y^2 = \frac{1}{4}$

or $4x^2 + 4y^2 + 32x + 63 = 0$

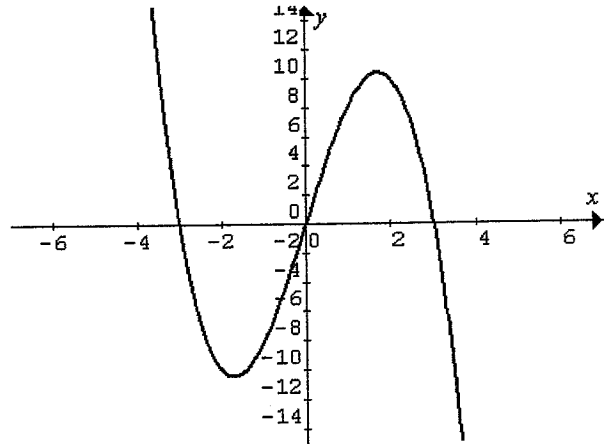
(iii) First we have $(x-2)^2 + (y+1)^2 = R^2$ then substitute (5,-5) to find "R" $\rightarrow (x-2)^2 + (y+1)^2 = 25$

Answers: (B)

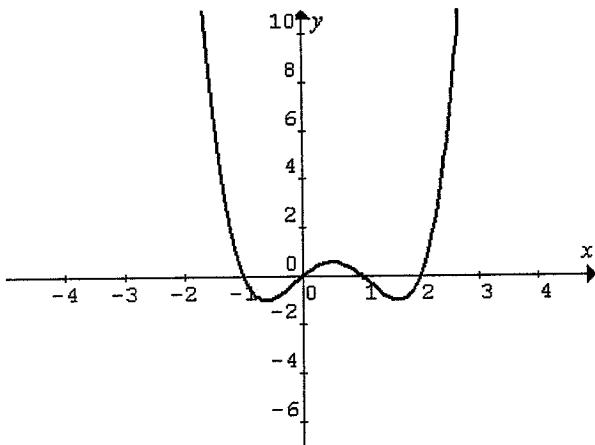
(i)



(ii)



(iii)



(iv)

