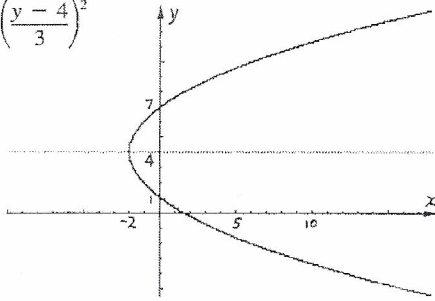
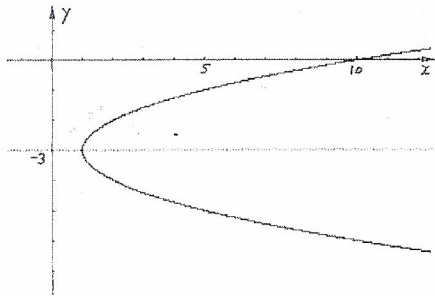


Exercise 12-3

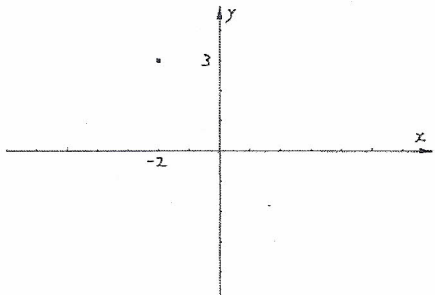
7. $2y^2 - 9x - 16y + 14 = 0$
 $9x + 18 = 2(y^2 - 8y + 16)$
 $\frac{x+2}{2} = \left(\frac{y-4}{3}\right)^2$



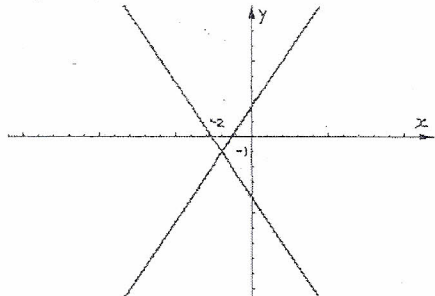
8. $y^2 - x + 6y + 10 = 0$
 $x - 1 = y^2 + 6y + 9$
 $\frac{x-1}{1} = \left(\frac{y+3}{1}\right)^2$



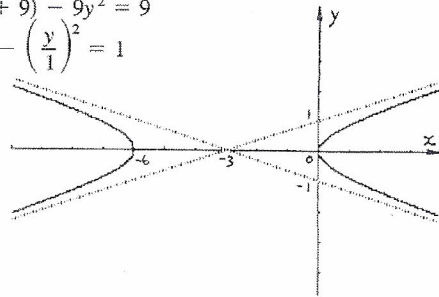
9. $x^2 + 25y^2 + 4x - 150y + 229 = 0$
 $(x^2 + 4x + 4) + 25(y^2 - 6y + 9) = 0$
 $\left(\frac{x+2}{5}\right)^2 + \left(\frac{y-3}{1}\right)^2 = 0$



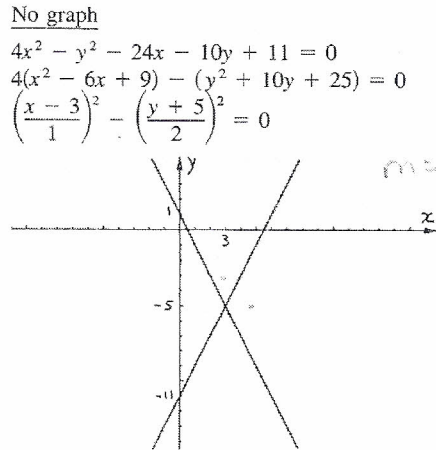
10. $9x^2 - 4y^2 + 36x - 8y + 32 = 0$
 $9(x^2 + 4x + 4) - 4(y^2 + 2y + 1) = 0$
 $\left(\frac{x+2}{2}\right)^2 - \left(\frac{y+1}{3}\right)^2 = 0$



11. $x^2 - 9y^2 + 6x = 0$
 $(x^2 + 6x + 9) - 9y^2 = 9$
 $\left(\frac{x+3}{3}\right)^2 - \left(\frac{y}{1}\right)^2 = 1$



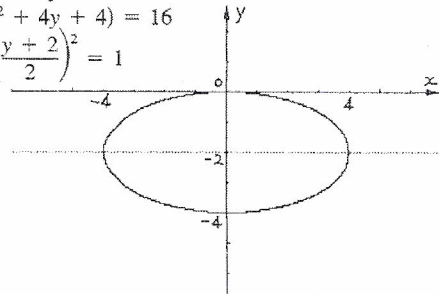
12. $x^2 + y^2 + 8x - 6y + 26 = 0$
 $(x^2 + 8x + 16) + (y^2 - 6y + 9) = -1$
 $\left(\frac{x+4}{1}\right)^2 + \left(\frac{y-3}{1}\right)^2 = -1$



13. $4x^2 - y^2 - 24x - 10y + 11 = 0$
 $4(x^2 - 6x + 9) - (y^2 + 10y + 25) = 0$
 $\left(\frac{x-3}{1}\right)^2 - \left(\frac{y+5}{2}\right)^2 = 0$

Handwritten notes:
 $y = 2x - 11$
 $y = -2x + 11$
 $m = 2$
 $m = -2$

14. $x^2 + 4y^2 + 16y = 0$
 $x^2 + 4(y^2 + 4y + 4) = 16$
 $\left(\frac{x}{4}\right)^2 + \left(\frac{y+2}{2}\right)^2 = 1$



15. $x^2 + y^2 - 6x - 8y = 0$
 $(x^2 - 6x + 9) + (y^2 - 8y + 16) = 25$
 $\left(\frac{x-3}{5}\right)^2 + \left(\frac{y-4}{5}\right)^2 = 1$

