Additional Mathematics Exercise 17 Answers

(*Circles*)

1. $x^2 + y^2 - 6x - 2y - 10 = 0$
2. $x^2 + y^2 + 2x - 6y + 5 = 0$
3. $x^2 + y^2 + 2x - 8y + 12 = 0$
4. –
5. $x^2 + y^2 - 25 = 0$
6. $x^2 + y^2 - 4x - 2y + 1 = 0$, $x^2 + y^2 + 4x - 6y + 9 = 0$
7. (a) – (b) $x^2 + y^2 - 2x - 2y - 3 = 0$
8. $x^2 + y^2 + 4x - 2y - 5 = 0$
9. (a) $x - 2y - 8 = 0$ (b) (4, –2) (c) $x^2 + y^2 - 8x + 4y + 15 = 0$
10. $x^2 + y^2 + 4x - 2y - 1 = 0$
11. $k < 10$
12. –
13. (a) – (b) (i) (2, 4) (ii) –
14. $x + y - 9 = 0$, $x^2 + y - 1 = 0$
15. $x - 3y - 10 = 0$, $3x - y + 2 = 0$
16. (a) $3\sqrt{2}$ (b) 2
17. (a) – (b) $y = mx - 2$ (c) $x^2 + y^2 + x + 2y = 0$
18. (a) (–1, –3) (b) $x^2 + y^2 - 3x + y - 10 = 0$
    (c) $x + y + 3 = 0$
19. (a) – (b) $5x + y - 7 = 0$, P(0, 7)
    (c) (i) $12x + 5y - 35 = 0$ (ii) Yes
20. –
21. $x^2 + y^2 - 14x - 8y + 47 = 0$
22. $x^2 + y^2 + 2x + 2y + 1 = 0$
23. (a) (0, 3) (b) $k_1 = 15$, $k_2 = -3$
24. $x^2 + y^2 + 3x + 1 = 0$
25. (a) $x^2 + y^2 + x - y - 2 = 0$ (b) $x^2 + y^2 - 5x + y - 6 = 0$
26. –
27. (a) $x^2 + y^2 + 7x + 2y - 15 = 0$ (b) $7x + 8y - 24 = 0$
28. (a) $x + y - 4 = 0$ (b) $x^2 + y^2 - 2x - 6y + 8 = 0$
29. (a) $x^2 + y^2 - 25 = 0$ (b) –
    (c) $3x - 4y = 25$
    (d) $4x + 3y = 0$, $x^2 + y^2 - 25 + k(4x + 3y) = 0$, $x^2 + y^2 + 32x + 24y - 25 = 0$