Exercise 2F

Question 16:
$a^2 + 2ab + b^2 - 9c^2$
$= (a + b)^2 - (3c)^2$
$= (a + b + 3c) (a + b - 3c)$
[Since $a^2 - b^2 = (a+b) (a-b)$]

Question 17:
$9 - a^2 + 2ab - b^2$
$= 9 - (a^2 - 2ab + b^2)$
$= 3^2 - (a - b)^2$
$= (3 + a - b) (3 - a + b)$
[Since $a^2 - b^2 = (a+b) (a-b)$]

Question 18:
$a^2 - 4ac + 4c^2 - b^2$
$= a^2 - 4ac + 4c^2 - b^2$
$= a^2 - 2\ a\ 2c + (2c)^2 - b^2$
$= (a - 2c)^2 - b^2$
$= (a - 2c + b) (a - 2c - b)$
[Since $a^2 - b^2 = (a+b) (a-b)$]

Question 19:
$9a^2 + 3a - 8b - 64b^2$
$= 9a^2 - 64b^2 + 3a - 8b$
$= (3a)^2 - (8b)^2 + (3a - 8b)$
$= (3a + 8b) (3a - 8b) + (3a - 8b)$
[Since $a^2 - b^2 = (a+b) (a-b)$]
$= (3a - 8b) (3a + 8b + 1)$

Question 20:
$x^2 - y^2 + 6y - 9$
$= x^2 - (y^2 - 6y + 9)$
$= x^2 - (y^2 - 2\ y\ 3 + 3^2)$
$= x^2 - (y - 3)^2$
$= [x + (y - 3)] [x - (y - 3)]$
[Since $a^2 - b^2 = (a+b) (a-b)$]
$= (x + y - 3) (x - y + 3)$

********** END **********