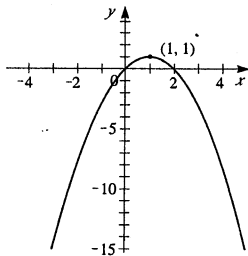


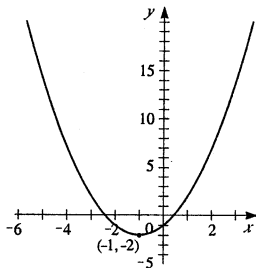
$$15. \quad f(x) = 2x - x^2 = -(x^2 - 2x) = -(x^2 - 2x + 1) + 1 \\ = -(x - 1)^2 + 1.$$

Therefore, the maximum value is $f(1) = 1$.



$$17. \quad f(x) = x^2 + 2x - 1 = (x^2 + 2x) - 1 = (x^2 + 2x + 1) - 1 - 1 \\ = (x + 1)^2 - 2.$$

Therefore, the minimum value is $f(-1) = -2$.



$$19. \quad f(x) = -x^2 - 3x + 3 = -(x^2 + 3x) + 3 = -(x^2 + 3x + \frac{9}{4}) + 3 + \frac{9}{4} \\ = -(x + \frac{3}{2})^2 + \frac{21}{4}.$$

Therefore, the maximum value is $f(-\frac{3}{2}) = \frac{21}{4}$.

