For each equation, use implicit differentiation to find dy/dx.

#1) $y^3 - x^2 = 8$

#2) $x^3 = y^3 - 7$

#3) $y^5 - x^4 = 5x$

#4) $(x + 2)^3 + (y + 2)^3 = 21$

#5) $x^2 y = 15$

#6) $xy - x = 9$

#7) $x(y - 1)^2 = 36$

#9) $\frac{1}{x} + \frac{1}{y} = 22$

#8) $y^3 - y^2 + y - 1 = x$

#10) $x^3 = (y - 2)^2 + 9$

For each equation, find $\frac{dy}{dx}$ evaluated at the given value.

#11) $y^2 - x^3 = 1$ at (2, 3)

#13) $x^2y + xy^2 = 0$ at x = -2 and y = -1

#12) $y^2 = 6x^2 - 25$ at (1, 1)

#14) $x^2 + y^2 = xy + 6$ at (2, 3)

For the demand equation, use implicit differentiation to find $\frac{dp}{dx}$

#15) $p^2 + p + 2x = 100$

#16) $12p^2 + 4p + 1 = x$

#17) $xp^3 = 36$

#18) $(p + 5)(x + 2) = 120$