5. $c = 2\sqrt{cx} - 1$ at $x = 2$

$c = 2\sqrt{2c} - 1$

$(c+1)^2 = (2\sqrt{2c})^2$

$c^2 + 2c + 1 = 8c$

$c^2 - 6c + 1 = 0$

$$c = \frac{6 \pm \sqrt{(-6)^2 - 4(1)(1)}}{2(1)} = \frac{6 \pm \sqrt{32}}{2}$$

10. $\frac{x^2-4}{x-2} = \frac{(x+2)(x-2)}{(x-2)} = x+2$

$x+2 = ax^2 - bx + 3$ at $x = 2$

$4 = 4a - 2b + 3$

$1 = 4a - 2b$

at $x = 3$

$ax^2 - bx + 3 = 2x - a + b$

$9a - 3b + 3 = 6 - a + b$

$10a - 4b = 3$

$-2(1 = 4a - 2b)$

$3 = 10a - 4b$

$-2 = -8a + 4b$

$3 = 10a - 4b$

$1 = 2a$

$a = \frac{1}{2}$

$1 = 4(\frac{1}{2}) - 2b$

$1 = 2 - 2b$

$-1 = -2b$

$b = \frac{1}{2}$