Algebra II, Quiz 1.4-2.2

1. State whether the following equations are equivalent and **justify** your answer. Remember to consider zero!

a) $x^2 = a\,x$ and $x = a$

b) $2x + 6 = 22$ and $2x = 28$

c) $\frac{p-1}{2} = 1$ and $0.5\,p = 1.5$

d) $3x - 6 = 10$ and $3x = 16$

2. Simplify by using the distributive law and combining like terms:

a) $7(x-2) - 5(2x-5)$

b) $6(2x+1) - 5(3x-4) + 6x - 10$

3. Factor out common factors using the distribute law in reverse:

a) $12m^2n + 3mn^2 + 6mn$

b) $15x^3 + 3x^2$

c) $3(2x-3) - x(2x-3)$

d) $-3(x^2 + 2x - 3) + x^2(x^2 + 2x - 3) + 2x(x^2 + 2x - 3)$