

1) Match the factored form to the expanded form:

_____ $(a+b)^2$	A: $a^2 - b^2$
_____ $(a-b)^2$	B: $a^3 - b^3$
_____ $(a+b)(a-b)$	C: $a^2 + 2ab + b^2$
_____ $(a+b)(a^2 - ab + b^2)$	D: $a^3 + b^3$
_____ $(a-b)(a^2 + ab + b^2)$	E: $a^2 - 2ab + b^2$

2) (5 points each) Factor completely:

a) $10x^2 + 70x + 120$

b) $x^2 + 12x + 36 - y^2$

c) $x^6 + y^6$

d) $9x^2 + 30xy + 25y^2$

e) $x^4 - 16$

f) $8x^6 - 64$

3) (5 points each) Solve for the variable by factoring:

a) $x^2 + 5x + 6 = 0$

b) $5x^2 - 2x = 7$

c) $x^3 + 5x^2 + 6x = 0$

d) $x^3 = 9x$

4) A ball that is tossed into the air follows a path given by the function $h(t) = -16t^2 + 32t + 48$ where t is time in seconds and h is the height in feet. Determine the time when the ball hits the ground.