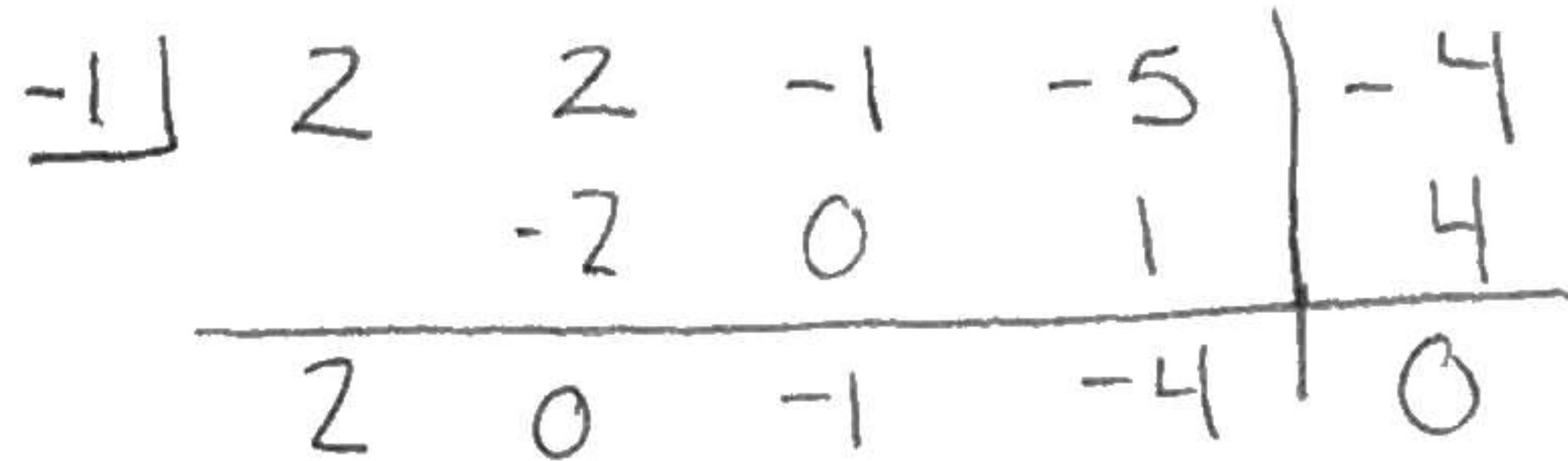
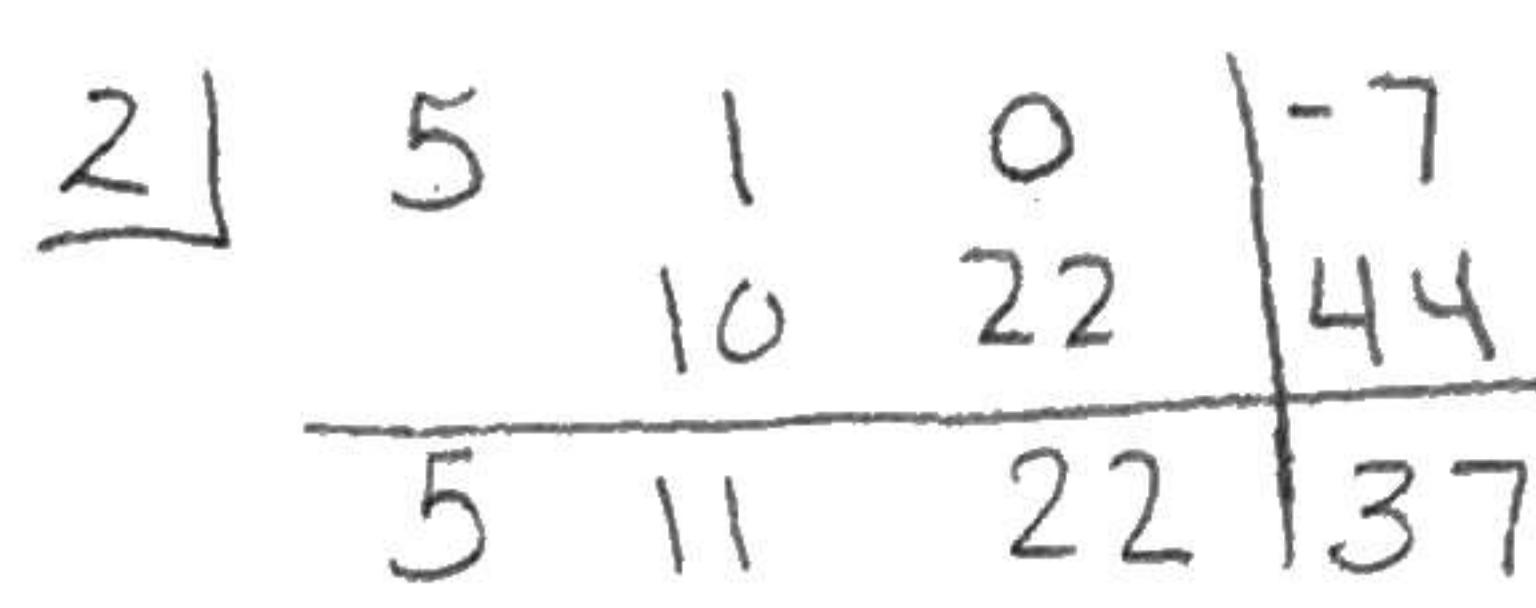
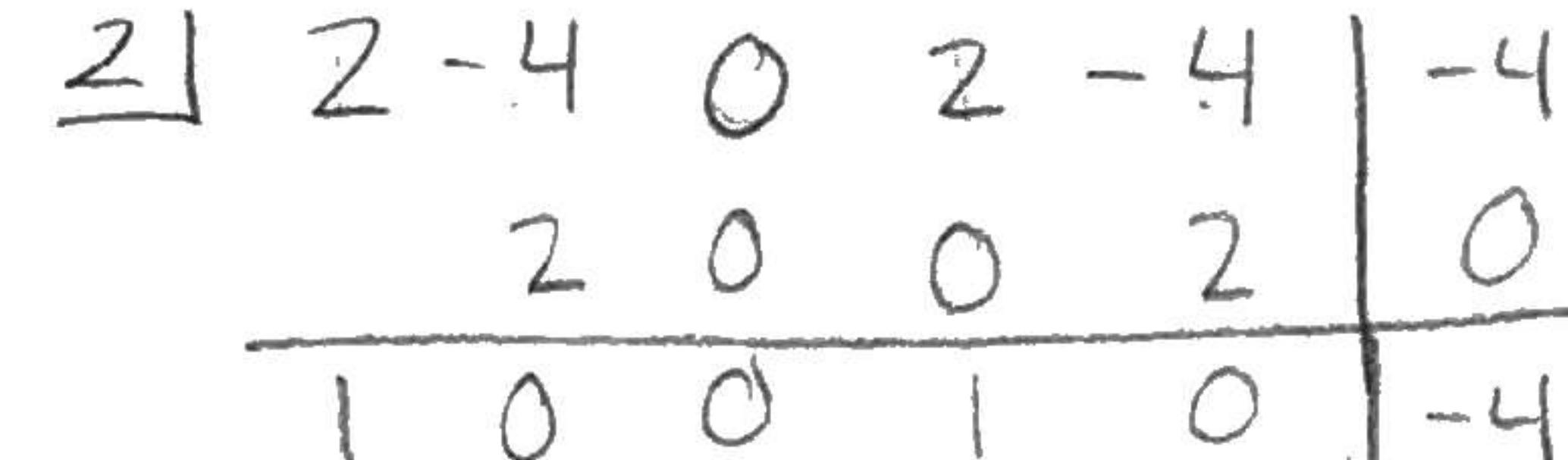
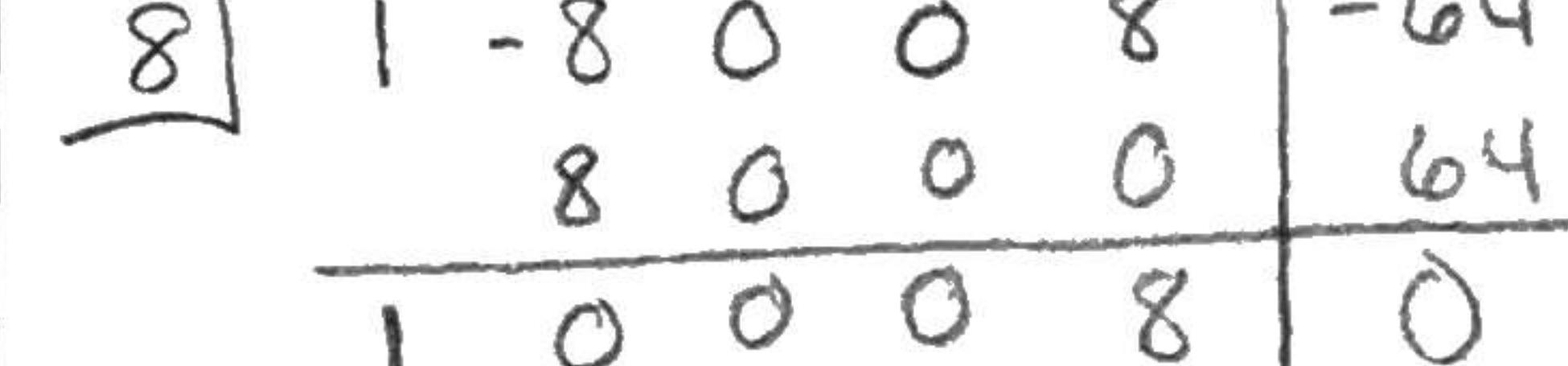


CW # 7 5.6 Factor Theorem, Factoring by Grouping , and Sum & Difference of cubes

Name _____

Period _____

Determine if the given binomial is a factor of the polynomial P(x).

1) $(x + 1)$ for $P(x) = 2x^4 + 2x^3 - x^2 - 5x - 4$  $\begin{array}{r} (x+1) \text{ is a factor of } P(x) \end{array}$	2) $(x - 2)$ for $P(x) = 5x^3 + x^2 - 7$  $\begin{array}{r} (x-2) \text{ is not a factor} \end{array}$
3) $(2x - 4)$ for $P(x) = 2x^5 - 4x^4 + 2x^2 - 4x - 4$  $\begin{array}{r} (2x-4) \text{ is not a factor} \end{array}$	4) $(x - 8)$ for $P(x) = x^5 - 8x^4 + 8x - 64$  $\begin{array}{r} (x-8) \text{ is a factor} \end{array}$

Factor each expression

5) $(8y^3 - 4y^2)(-50y + 25)$ $4y^2(2y-1) - 25(2y-1)$ $(4y^2 - 25)(2y-1)$ $\boxed{(2y-5)(2y+5)(2y-1)}$	6) $(4b^3 + 3b^2)(-16b - 12)$ $b^2(4b+3) - 4(4b+3)$ $(b^2 - 4)(4b+3)$ $\boxed{(b-2)(b+2)(4b+3)}$	7) $(3x^3 + x^2)(-27x - 9)$ $x^2(3x+1) - 9(3x+1)$ $(x^2 - 9)(3x+1)$ $\boxed{(x-3)(x+3)(3x+1)}$
8) $125+z^3$ $(5)^3+(z)^3$ $\boxed{(5+z)(5^2 - 5z + z^2)}$	9) $6x^4 - 162x$ $6x(x^3 - 27)$ $\boxed{6x(x-3)(x^2 + 3x + 9)}$	10) $y^5 + 27y^2$ $y^2(y^3 + 27)$ $\boxed{y^2(y+3)(y^2 - 3y + 9)}$