Given $p(x)$, find $p(-3)$ by using synthetic substitution.

1. $p(x) = 8x^3 + 7x^2 + 2x + 4$

2. $p(x) = x^3 + 6x^2 + 7x - 25$

3. $p(x) = 2x^3 + 5x^2 - 3x$

4. $p(x) = -x^4 + 5x^3 - 8x + 45$

Determine whether the given binomial is a factor of the polynomial $p(x)$.
If so, find the remaining factors of $p(x)$.

12. $p(x) = x^3 + 2x^2 - x - 2;\ (x + 2)$

13. $p(x) = 2x^4 + 6x^3 - 5x - 10;\ (x + 2)$

14. $p(x) = x^3 - 22x^2 + 157x - 360;\ (x - 8)$

15. $p(x) = 4x^3 - 12x^2 + 2x - 5;\ (x - 3)$

20. Explain the Error Two students used synthetic division to divide $3x^3 - 2x - 8$
by $x - 2$. Determine which solution is correct. Find the error in the other solution.

A.				B.			
2⌋ 3	0	−2	−8	−2⌋ 3	0	−2	−8
	6	12	20		−6	12	−20
3 6	10	12		3	−6	10	−28