

**Divide the following using synthetic division**

1.  $(x^2 + 14x + 38) \div (x + 8)$

2.  $(x^2 - 74) \div (x - 8)$

3.  $(x^3 + 7x^2 + 14x + 3) \div (x + 2)$

4.  $(x^3 - 13x^2 + 40x + 18) \div (x - 7)$

5.  $(3x^3 + 34x^2 + 89x + 75) \div (x + 8)$

6.  $(8x^3 - 55x^2 + 44x - 12) \div (x - 6)$

7.  $(x^3 - 13x^2 + 40x + 18) \div (x - 7)$

8.  $(x^3 + 6x^2 + 9x - 5) \div (x + 1)$

9. 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.
$\begin{array}{r} 2   & 3 & 0 & -2 & -8 \\ & & 6 & 12 & 20 \\ \hline & 3 & 6 & 10 & 12 \end{array}$	$\begin{array}{r} 2   & 3 & 0 & -2 & -8 \\ & & -6 & 12 & -20 \\ \hline & 3 & -6 & 10 & -28 \end{array}$