Dividing Polynomials Name: _____

Directions: *Solve each division problem. Find the answer in the answer column and write the number across from it in the corresponding blank in the statement below.*

Shakespeare used about $\underline{\quad}_{A}\ \underline{\quad}_{B}, \underline{\quad}_{C}\ \underline{\quad}_{D}\ \underline{\quad}_{E}$ words in his plays, sonnets, and poems. It is believed that his is the first written use of approximately $\underline{\quad}_{C}, \underline{\quad}_{F}\ \underline{\quad}_{G}\ \underline{\quad}_{E}$ of them.

Answers	Number
$x-6$	0
$2x-6$	1
$x+4$	2
$x-y$	3
$x+6$	4
$3x+7y$	5
$3x^2+x-1$	6
$2x^2-3x-1$	7
$3x-7y$	8

A. $x+2\overline{)x^2+6x+8}$ **B.** $x-1\overline{)x^2-7x+6}$ **C.** $5x+1\overline{)10x^2-28x-6}$

D. $x-y\overline{)x^2-2xy+y^2}$ **E.** $3x-7y\overline{)9x^2-42xy+49y^2}$

F. $2x-3\overline{)6x^3-7x^2-5x+3}$ **G.** $3x+1\overline{)6x^3-7x^2-6x-1}$

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Advanced Topics:

Example:	On your own:
1a. When there is a remainder write it over the divisor and add this to the quotient. $3x+4+\frac{2}{x+1}$ $x+1\overline{)3x^2+7x+6}$ $-(3x^2+3x)$ $4x+6$ $-(4x+4)$ 2	1b. $x-2\overline{)2x^2+3x+11}$ 1c. $x+1\overline{)3x^3+5x^2-2x-4}$
2a $x+3\overline{)x^3+27}$ $=x+3\overline{)x^3+0x^2+0x+27}$ x^2-3x+9 $x+3\overline{)x^3+0x^2+0x+27}$ $-(x^3+3x^2)$ $-3x^2+0x+27$ $-(-3x^2-9x)$ $9x+27$ $-(9x+27)$ 0	2b. $2n-1\overline{)8n^3-1}$ 2c. $m^2+m+1\overline{)m^4+m^2+1}$