Name $\qquad$ Date $\qquad$ Pd
$\square$ Use when you get it right all by yourself
SUse when you did it all by yourself, but made a silly mistake
$\boldsymbol{H}$ Use when you could do it alone with a little help from teacher or peer
GUse when you completed the problem in a group
XUse when a question was attempted but wrong (get help)
$\boldsymbol{N} U$ use when a question was not even attempted

| CONCEPTS | BASIC | INTERMEDIATE | ADVANCED |
| :--- | :---: | :---: | :---: |
| Dividing | 1,2 |  |  |
| Long Division | $3,4,5,8$ | 6,7 |  |
| Synthetic Division | $3,4,5,8$ | 6,7 |  |
| Word problems |  |  |  |

Divide. Show all work to earn full credit.

1. $\frac{x^{2}+21 x+49}{7 x^{2}}$
2. $\frac{5 a^{3} b-15 a b^{2}+20 a b}{-5 a b}$

Use long division \& synthetic division to divide the two polynomials. Show work for both methods to earn full credit.
3. $\left(a^{2}-a+4\right) \div(a-2)$
4. $\left(4 x^{2}+20 x+7\right) \div(x+5)$
5. $\frac{a^{3}+a^{2}+2 a+6}{a-2}$
6. $\frac{9 b^{3}-18 b^{2}+8 b-1}{3 b-2}$
7. $\frac{4 x^{4}-4 x^{3}+x^{2}+4 x-3}{2 x-1}$
8. $\frac{-10 x^{2}-x^{3}-21 x+18}{x-6}$
9. The area of a rectangle is $\left(15 x^{3}-3 x^{2}+60\right)$ square feet. If its length is $3 x^{2}$ feet, find its width.
10. The perimeter of an equilateral triangle is $\left(21 a^{3} b^{6}+3 a-3\right)$ units. Find the length of a side.


