## Algebra II

Factoring / Code breaker
Name $\qquad$

Directions: Factor the problems on the front, then use the code-exchange sheet on the back to find the hidden message. Be the first to answer the question posed in the hidden message and receive a free-homework pass. The factoring problems will be any of the varieties we have discussed.

1) $x^{2}+3 x-40$
2) $25 n^{2}-4$
3) $9 a+21 b-6 c$
4) $r^{2}-20 r+100$
5) $6 x^{2}+17 x-14$
6) $2 a^{2}+18 a+40$
7) $j^{3}-8 k^{3}$
8) $\mathrm{b}^{2}-49$
9) $m^{2}-15 m+54$
10) $x^{4}-36 x^{2}$
11) $4 y^{2}+19 y+12$
12) $a^{2}-2 a b+b^{2}$
13) $10 \mathrm{pq}-20 \mathrm{nq}-30 \mathrm{mq}$
14) $h^{2}-4 h+3$
15) $x^{2}+22 x+121$
16) $3 \mathrm{c}^{2}+12 \mathrm{c}-36$
17) $x^{2} y+x y^{8}$
18) $25 \mathrm{a}^{2}-144$
19) $y^{2}-2 y-63$
20) $5 \mathrm{x}^{3}+45 \mathrm{x}^{2}+40 \mathrm{x}$
21) $d^{3}+64$

HIDDEN MESSAGE: To find the hidden message, fill in the blanks with the proper letter (which you will locate in the CODE-EXCHANGE chart listed below). Here is how to find the proper letter: Under each blank is the number of one of the problems on the reverse side of this page. Look at that problem and find the largest number written in your answer (ignore negative signs). Find that number in the CODE-EXCHANGE chart, and exchange it for whatever letter it is set equal to. Place that letter in the blank.

Here is the hidden question:


CODE-EXCHANGE chart:

| $\mathrm{A}=11$ | $\mathrm{G}=17$ | $\mathrm{~N}=12$ | $\mathrm{U}=24$ |
| :--- | :--- | :--- | :--- |
| $\mathrm{~B}=13$ | $\mathrm{H}=10$ | $\mathrm{O}=6$ | $\mathrm{~V}=2$ |
| $\mathrm{C}=20$ | $\mathrm{I}=4$ | $\mathrm{P}=18$ | $\mathrm{~W}=9$ |
| $\mathrm{D}=25$ | $\mathrm{~J}=23$ | $\mathrm{Q}=22$ | $\mathrm{X}=26$ |
| $\mathrm{E}=5$ | $\mathrm{~K}=15$ | $\mathrm{R}=14$ | $\mathrm{Y}=19$ |
| $\mathrm{~F}=21$ | $\mathrm{~L}=7$ | $\mathrm{~S}=8$ | $\mathrm{Z}=1$ |

FREE HOMEWORK PASS: To win the free homework pass, you must be the first student to tell me (or show me) the answer to the question posed in the hidden message above. Only the first correct answer will earn the prize. You may attempt to answer one time only, but only after every problem on the front has been completed! Good luck!!

