Name_____ Date_____

Per._____ Col._____

ALGEBRA 2 TUNE-UP CHAPTERS 1-5

SHOW ALL WORK. NO CALCULATORS! Give all answers in simplest form.

1. Solve: $2\lvert 4+5x \rvert \geq 22$	2. Solve algebraically: $\begin{aligned} 3x+2y &= 6 \\ -6x-3y &= -6 \end{aligned}$
3. Factor completely: $36x^2 - 100$	4. Write a matrix equation and solve, using the inverse: $\begin{aligned} 3x-5y &= 4 \\ 2x+7y &= 6 \end{aligned}$
5. Graph: $y = 3(x+4)^2 + 5$	6. Solve by completing the square: $4x^2-24x+32 = 0$

7. Solve over the complex numbers and graph the solutions in the complex plane:

$$\left(5x^2+20\right)\left(3x-1\right)=0$$

8.

Which of the following sentences is true about the graphs of $y=3(x-5)^2+1$ and $y=3(x+5)^2+1$?

A Their vertices are maximums.

B The graphs have the same shape with different vertices.

C The graphs have different shapes with different vertices.

D One graph has a vertex that is a maximum, while the other graph has a vertex that is a minimum.

9. The base of a rectangle is 5 less than three times the height. The area is 25 sq. in. Find the exact value of the height, in simplest form.

10. Given complex numbers $A = 3 - 2i$ and $B = 4 - 3i$, calculate the following:

$A + B =$

$A - B =$

$A \cdot B =$

$\frac{A}{B} =$

11. What are the x-intercepts of the graph of $y = 12x^2 - 5x - 2$?