Name:_____

Alg II – day 10

A. Solve:

1. $x^2+2x-8<0$

2. $x^2+6x+1=0$

3. $|x+3|>3$

4. $3(x+2)+2=10$

5. $2x^3-x^2-13x-6=0$

6. $x^2+2x+9=0$

7. $x^2+10x+25<0$

B. Simplify:

8. i^{471}

9. $(3+i)(4-2i)$

10. $\sqrt{-28}$

11. $\dfrac{7}{2+i}$

C. Write the quadratic equations with roots of:

12. $\{\ 7+2i,\quad\ \}$

13. $\{\ 2+\sqrt{7},\quad\ \}$

D. Find the determinant:

14. $\begin{pmatrix} 3 & 4 \\ 1 & 3 \end{pmatrix}$

15. $\begin{pmatrix} 4 & 1 & 3 \\ 7 & 2 & 0 \\ 1 & -1 & 3 \end{pmatrix}$

E. Solve for x & y using Cramer's Rule:

16. $\begin{aligned} 2x+5y&=9 \\ 5x-2y&=7 \end{aligned}$

F. Find the sum & product of the roots:

17. $2x^2+6x-1=0$

18. $x^2-7x+2=0$

G. Solve (to the nearest hundredth):

19. $3^x=13$

20. $4^{x-1}=64$

21. $2^x=27$

22. $\log_7 x=2$

23. $\log 1000=x$

24. $\log_x 81=4$

H. Write as a single logarithm:

25. $2\log 3+3\log 2=$

26. $2\log 3-2\log 5=$

27. $\frac{1}{3}\log 27=$

Name:_____

Alg II – day 11

Solve:

$6x^3+17x^2-5x-6=0$

$x^3+9x^2+26x+24=0$

$5(x-1)+2x=20$

$2x^2+3x+8=0$

$15-\frac{2}{3}x>-5$

$x^2-10x+25\geq 0$

$x^2-3x\geq 10$

$2x^2+7x+3<0$

$|x+2|<7$

$|2x-5|>7$

Simplify:

i^{47132}

$\sqrt{-17}$

$(5+i)(3-i)$

$|4+i|$

$\frac{3}{2-i}$

Write the quadratic equations with roots of:

$\{4-i, \_\_\_\_\}$ $\left\{3, \frac{-1}{2}\right\}$ $\{3-\sqrt{5}, \_\_\_\_\_\}$

Find the determinant:

By hand:

$\begin{pmatrix} 3 & 1 \\ 7 & -2 \end{pmatrix}$ $\begin{pmatrix} 1 & 4 & 2 \\ 3 & 0 & 5 \\ 1 & 0 & 2 \end{pmatrix}$

On calc:

$\begin{pmatrix} -4 & 1 & 5 \\ 3 & 2 & 0 \\ -1 & -1 & -5 \end{pmatrix}$

Solve for x & y using Cramer's Rule (or RREF on calc):

By hand:

$$3x+2y=7$$
$$5x-y=4$$

On calc:

$$2x+5y=9$$
$$5x-2y=7$$

$$2x+4y+z=0$$
$$3x-y+2z=-1$$
$$x+6y-3z=7$$

Find the sum & product of the roots:

$2x^2+5x-7=0$ $x^2+6x-8=0$

Solve (to the nearest hundredth): $5^x=13$ $8^x=213$

Solve (by hand):

$6^{x+1} = 216$ $\log_5 \frac{1}{25} = x$ $\log_x 32 = 5$

$\log_7 1 = x$ $9^{x-1} = \frac{1}{27}$ $\log_x 81 = \frac{4}{3}$

Write as a single logarithm:

$2\log 3 + 3\log 5 =$ $3\log 2 - \log 9 =$ $\frac{1}{4}\log 16 =$

Change to standard form, find the center & radius, and graph:

$x^2 + y^2 - 6x + 4y + 12 = 0$ $x^2 + y^2 + 10x - 2y - 10 = 0$

Name:_____

Alg II – day 12

Solve:

$8+2(x-5)=14$

$3(2x+1)=6x-7$

$x^2-6x+10=0$

$5x^2-4x=33$

$x^3+8x^2+11x-20=0$

$|2x-5|=7$

$|x+3|\leq 6$

$|3-2x|>11$

$2x^2+9x+4\geq 0$

$x^2+6x+9<0$

Simplify:

i^{731}

$\sqrt{-18}$

$|2+5i|$

$(3+i)(7-i)$

$\dfrac{4+3i}{4-3i}$

Write the quadratic equations with roots of:

$\{5-2i,\_\_\_\_\}$

$\{9,9\}$

$\{7+\sqrt{3},\_\_\_\_\}$

Find the determinant:

$$\begin{pmatrix} -2 & -5 \\ 1 & 2 \end{pmatrix} \qquad \begin{pmatrix} 1 & 3 & 2 \\ 0 & 1 & 4 \\ 2 & 1 & -2 \end{pmatrix}$$

Solve for x & y using Cramer's Rule (or RREF on calc):

By hand:

$$5x+3y=8$$
$$7x-4y=10$$

On calc:

$$2x+3y=-14$$
$$x-y=-2$$

$$x+2y-3z=11$$
$$2x+y-2z=9$$
$$4x+3y+z=16$$

Solve (to the nearest hundredth): $3^x=17$ $5^{3x-2}=49$

Solve (by hand):

$\log_3 x=3$ $\log_x 64=3$ $\log_6 \frac{1}{6}=x$

$\log 0.001=x$ $27^{2x+1}=\frac{1}{9}$ $\log_8 \frac{1}{4}=x$

Write as a single logarithm:

$2\log 3+3\log 2=$ $5\log 2-2\log 5=$ $2\log 4=$

Ellipse:

$$\frac{x^2}{16}+\frac{y^2}{25}=1$$

Find the center & radius, and graph:

$$(x+1)^2+(y-3)^2=16$$

$x^2+y^2+2x+4y-4=0$ $x^2+y^2-12x=0$