Unit 1 Review sheet Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Date:\_\_\_\_\_\_\_\_\_\_Block:\_\_

Factor the following completely:

A) $x^{2}+6x-40$ B)$ x^{2}-625$ C) $x^{2}-23x+126$

D)$ 5x^{2}-45$ E)$ 14x^{2}+6x-42x^{4}$

F)$ 3x^{2}-6x-15$ G) $3x^{2}+10x-8$

SOLVE BY FACTORING

Solve by factoring.

A) $x^{2}+2x-48=0$ B)$ x^{2}-25=0$

C) $2x^{3}-20x^{2}+42x=0$

IMAGINARY & COMPLEX NUMBERS

Simplify.

A.  B. 

C. D.  E. 

F.  G.  H. 

D. What is the complex conjugate of ?

SOLVE BY COMPLETING THE SQUARE

Solve by completing the square.

A) $x^{2}+6x+3=0$ B)$ x^{2}+8x=-20$

C)$ x^{2}+4x-4=0$

DISCRIMINANT

Find the discriminant of the quadratic equation and complete the table. Do NOT solve the equation.

|  |  |  |
| --- | --- | --- |
| Equation | Discriminant | Describe the solutions including how many, real, rational, irrational, or imaginary |
| x2 + 2x + 8 = 0 |  |  |
| x2 + 6x + 1 = 0 |  |  |
| 4x2 + 2x – 6 = 0 |  |  |
| 2x2 – 2x + 5 = 0 |  |  |

QUADRACTIC FORMULA

Solve using the Quadratic Formula.

A) $x^{2}+5x+8=0$ B)$ 3x^{2}+4x=6$

C)$ 6x^{2}+2x-4=0$