**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculus 12 (2021)**

**Review of PreCalculus Assignment**

**1. Expand and simplify**

 a) $(4x-1)(3x+7)$ b) $\left(2x-1\right)^{2}$

 c) $4\left(x^{2}-x+2\right)-5(x^{2}-2x+1)$ d) $\left(1+x-x^{2}\right)^{2}$

**2. Simplify**

 a) $\frac{1}{x+1 }+\frac{1}{x-1}$ b) $\frac{1+\frac{1}{c-1}}{1-\frac{1}{c-1}}$

**3. Factor**

 a) $2x+12x^{3}$ b) $x^{2}-x-6$

 c) $2x^{2}+7x-4$ d) $9x^{2}-36$

 e) $x^{2}+10x+25$ f) $t^{3}+1$

 g) $8x^{3}-27$ h) $x^{3}+3x^{2}-x-3$

**4. Solve the equation**

 a) $x^{2}+9x-10=0$ b) $x^{2}-2x=8$

 c) $x^{2}-2x-7=0$ d) $x^{2}-x+2=0$

**5. Use the Laws of Exponents to rewrite and simplify the expressions.**

 a) $3^{10}×9^{8}$ b) $3^{-\frac{1}{2}}$

 c) $125^{\frac{2}{3}}$ d) $\frac{\left(-2x^{2}y^{3}\right)^{2}}{x^{-5}y^{2}}$

**6. Rationalize the expressions**

 a) $\frac{2}{3-\sqrt{5}}$ b) $\frac{\sqrt{x}-3}{x-9}$

**7. Write equations for the following lines in general form (**$Ax+By+C=0)$

a) passes through $(2,5)$ and $(8,-7)$

b) perpendicular to $6x-3y+2=0$ and has an $x$-intercept of$ -6$