Math 10 – Final Exam Formulas

Exponent Rules

$$a^{0}=1$$

$$a^{m}⋅a^{n}=a^{m+n}, a \ne 0$$

$$\frac{a^{m}}{a^{n}}=a^{m-n}, a \ne 0$$

$$\left(a^{m}\right)^{n}=a^{m⋅n}$$

$$\left(ab\right)^{n}=a^{n}⋅b^{n}$$

$$\left(\frac{a}{b}\right)^{n}=\frac{a^{n}}{b^{n}}$$

$$\left(\frac{a}{b}\right)^{-n}=\frac{b^{n}}{a^{n}}$$

$$\frac{a^{-m}}{b^{-n}}= \frac{b^{n}}{a^{m}}$$

$$a^{-n}=\frac{1}{a^{n}}$$

$$a^{\frac{1}{n}}=\sqrt[n]{a}$$

$$a^{\frac{m}{n}}=\sqrt[n]{a^{m}}$$

$$a^{-\frac{m}{n}}=\frac{1}{\sqrt[n]{a^{m}}}$$

Difference of Squares

$$a^{2}-b^{2}=(a+b)(a-b)$$

Perfect Square Trinomials

$$a^{2}+2ab+ b^{2}=(a+b)^{2}$$

$$a^{2}-2ab+ b^{2}=(a-b)^{2}$$

Slope

rate of change = $\frac{ΔY}{ΔX}$

$$m=\frac{rise}{run}=\frac{y\_{2}-y\_{1}}{x\_{2}-x\_{1}}$$

Standard Form of a Linear Equation

Ax + By = C

Slope-Intercept Form of a Linear Equation

y = mx + b

Point-Slope Form of a Linear Equation

y – y1 = m(x – x1)

General Form of a Linear Equation

Ax + By + C = 0

Arithmetic Sequence

$$t\_{n}=a\left(n-1\right)d$$

Arithmetic Series

$$S\_{n}=\frac{n}{2}\left(a+l\right) or \frac{n}{2}(2a+\left(n-1\right)d$$

Simple Interest

$I=Prt$ $A=P+I or A=P(1+rt)$

Compound Interest

$$A=P\left(1+\frac{r}{n}\right)^{nt}$$

Trigonometry

$$Sine= \frac{O}{H} Cosine= \frac{A}{H} Tangent= \frac{O}{A}$$