

2010 Math Contest University of Houston

$$S = 2\pi r$$

$$\lim_{x \rightarrow 0} \frac{\sin(x)}{x} = 1$$

$$\tan(\pi) = 0$$

$$\sin(2x) = 2 \sin(x) \cos(x)$$

$$\det \begin{pmatrix} a & b \\ c & d \end{pmatrix} = ad - bc \quad \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$|a+b| \leq |a| + |b|$$

$$e^{i\pi} = -1$$

$$a^2 + b^2 = c^2$$

$$\cos(\theta) = \frac{x}{r}$$

$$A = \pi r^2$$

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$$m = \frac{y_1 - y_0}{x_1 - x_0}$$

$$\cos\left(\frac{\pi}{3}\right) = \frac{1}{2}$$

$$1 + r + r^2 + \dots + r^n = \frac{r^{n+1} - 1}{r - 1}$$

$$A = \frac{1}{2}bh$$

$$y = mx + b \quad e^{i\theta} + e^{-i\theta} = 2 \cos(\theta)$$

$$\cos^2(\theta) + \sin^2(\theta) = 1$$

$$\varepsilon > 0$$

$$\sum_{n=0}^{\infty} \frac{1}{3^n} = \frac{3}{2} \quad \bar{x} = \frac{1}{n} \sum_{i=1}^n x_i$$

$$\frac{dy}{dx}$$

$$\frac{d}{dx} \ln|x| = \frac{1}{x} \quad f(f^{-1}(x)) = x$$

$$\cos(2\theta) = \cos^2(\theta) - \sin^2(\theta)$$

$$y = 0$$

$$d(P, Q) = \sqrt{(q_1 - p_1)^2 + (q_2 - p_2)^2}$$

$$x_{n+1} = x_n - \frac{f(x_n)}{f'(x_n)}$$

$$\log(AB) = \log(A) + \log(B)$$

$$\sum_{i=1}^n f(x_i^*) \Delta x_i$$

$$\cos^2(\theta) = \frac{1 + \cos(2\theta)}{2}$$

$$\frac{d}{dx} \int_a^x f(t) dt = f(x)$$

$$\int u dv = uv - \int v du$$

$$\lim_{x \rightarrow \infty} x e^{-x} = 0$$

$$x = r \cos(\theta)$$

$$y = r \sin(\theta)$$

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

$$P(n)$$

$$\chi(x_0)$$

$$x = 0$$

$$\left\{ \frac{1}{n} \right\}$$

$$b/a$$

$$n!$$

$$\xi_0$$

$$|x|$$

$$i = \sqrt{-1}$$

$$R_{m,n}$$

$$e < 3 < \pi$$

$$\binom{n}{k}$$