

Final Formula Sheet

$$\frac{\sin \alpha}{a} = \frac{\sin \beta}{b} = \frac{\sin \gamma}{c} \quad a^2 = b^2 + c^2 - 2bc \cdot \cos \alpha$$

$$A = \frac{1}{2}bc \cdot \sin \alpha = \sqrt{s(s-a)(s-b)(s-c)} \text{ where } s = \frac{a+b+c}{2}$$

$$\vec{a} = \langle a_1, a_2 \rangle = a_1\hat{i} + a_2\hat{j} \quad \|\vec{a}\| = \sqrt{a_1^2 + a_2^2}$$

$$\vec{a} \cdot \vec{b} = \|\vec{a}\|\|\vec{b}\| \cos \theta = a_1b_1 + a_2b_2 \quad \text{Work} = \text{Force} \cdot \text{Distance}$$

$$z = a + bi = r \cdot \text{cis } \theta = r(\cos \theta + i \sin \theta)$$

$$z_1z_2 = r_1r_2 \text{ cis } (\theta_1 + \theta_2) \quad \frac{z_1}{z_2} = \frac{r_1}{r_2} \text{ cis } (\theta_1 - \theta_2)$$

$$z^n = r^n \text{ cis } (n\theta)$$

$$\sqrt[n]{z} = \sqrt[n]{r} \text{ cis } \left(\frac{\theta + 2\pi k}{n} \right) = \sqrt[n]{r} \text{ cis } \left(\frac{\theta + 360^\circ k}{n} \right)$$

$$(x-h)^2 + (y-k)^2 = r^2$$

$$(x-h)^2 = 4p(y-k) \quad \text{or} \quad (y-k)^2 = 4p(x-h)$$

$$\frac{(x-h)^2}{a^2} + \frac{(y-k)^2}{b^2} = 1 \quad \text{or} \quad \frac{(x-h)^2}{b^2} + \frac{(y-k)^2}{a^2} = 1$$

$$\frac{(x-h)^2}{a^2} - \frac{(y-k)^2}{b^2} = 1 \quad \text{or} \quad \frac{(y-k)^2}{a^2} - \frac{(x-h)^2}{b^2} = 1$$

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$$z = a + bi = r \cdot \text{cis } \theta = r(\cos \theta + i \sin \theta)$$

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$$z^n = r^n \text{ cis } (n\theta)$$

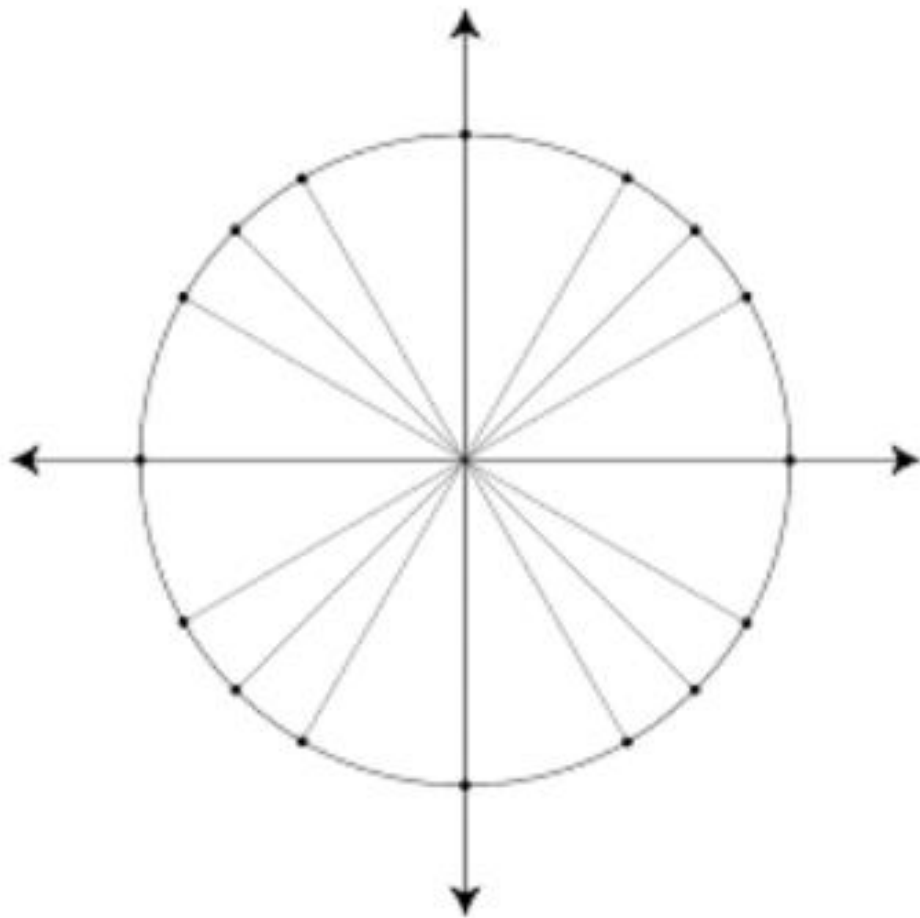
$$\sqrt[n]{z} = \sqrt[n]{r} \text{ cis } \left(\frac{\theta + 2\pi k}{n} \right) = \sqrt[n]{r} \text{ cis } \left(\frac{\theta + 360^\circ k}{n} \right)$$

$$(x-h)^2 + (y-k)^2 = r^2$$

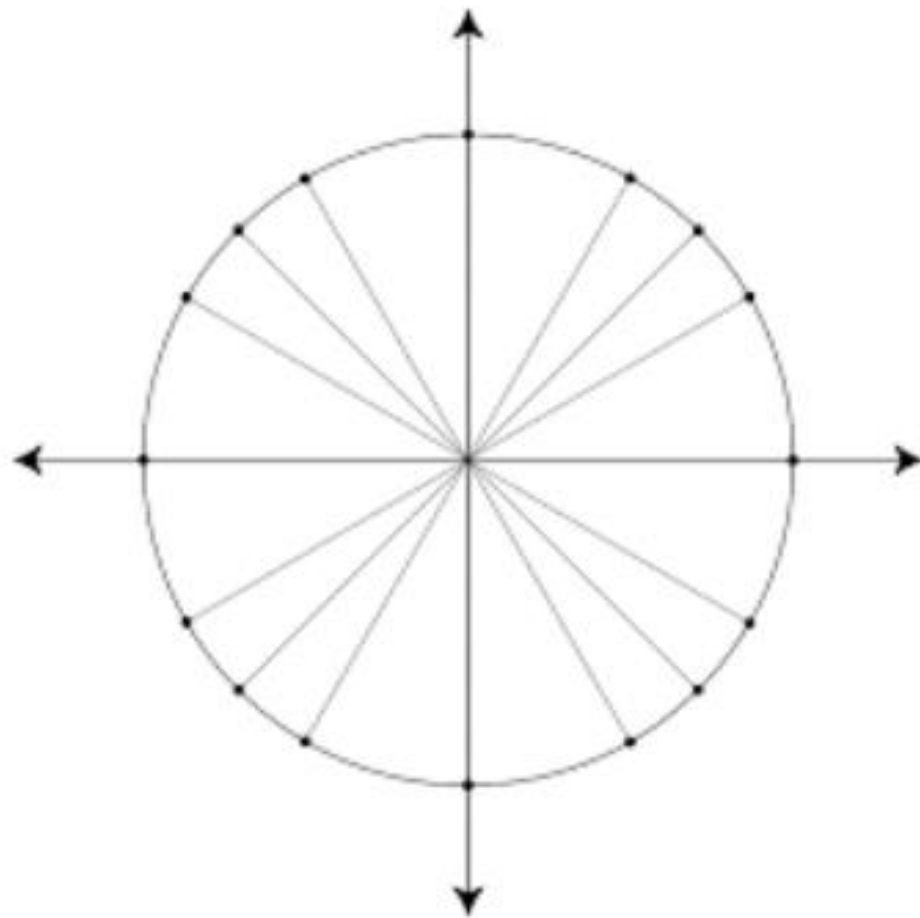
$$(x-h)^2 = 4p(y-k) \quad \text{or} \quad (y-k)^2 = 4p(x-h)$$

$$\frac{(x-h)^2}{a^2} + \frac{(y-k)^2}{b^2} = 1 \quad \text{or} \quad \frac{(x-h)^2}{b^2} + \frac{(y-k)^2}{a^2} = 1$$

$$\frac{(x-h)^2}{a^2} - \frac{(y-k)^2}{b^2} = 1 \quad \text{or} \quad \frac{(y-k)^2}{a^2} - \frac{(x-h)^2}{b^2} = 1$$



Nothing written on this formula sheet counts towards your grade.



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