

Mathematics 20-3 Formula Sheet

Finance

Simple interest

Compound interest

$$I = Prt$$

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

I: interest earned

A: final amount

P: principal

P: principal

r: rate of interest

r: rate of interest

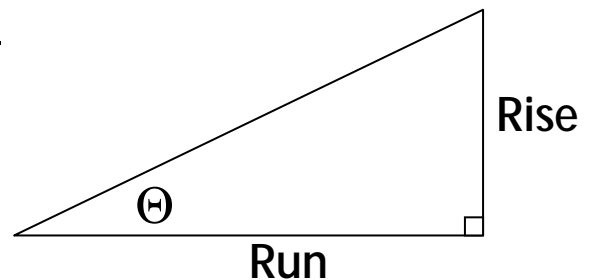
t: time

n: number of compounding periods per year
t: number of years

Rate of Change and Trigonometry

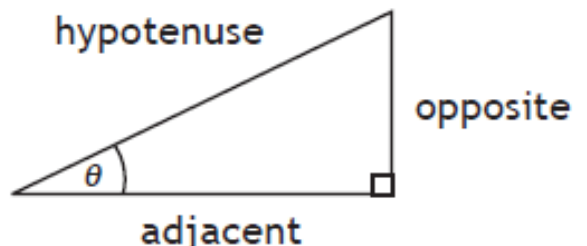
$$\text{slope} = \frac{\text{rise}}{\text{run}}$$

$$\tan Q = \frac{\text{rise}}{\text{run}}$$



$$\text{slope} = \frac{y_2 - y_1}{x_2 - x_1}$$

$$Q = \tan^{-1} \frac{\text{rise}}{\text{run}}$$



$$\text{Grade} = \text{slope} \times 100\%$$

Pythagorean Theorem: $a^2 + b^2 = c^2$ (right triangles only)

Trigonometric Ratios:

$$\sin \theta = \frac{\text{opposite}}{\text{hypotenuse}}$$

$$\cos \theta = \frac{\text{adjacent}}{\text{hypotenuse}}$$

$$\tan \theta = \frac{\text{opposite}}{\text{adjacent}}$$

2-D Shapes

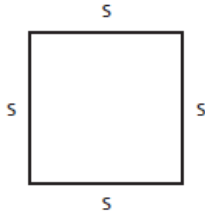
CONVERSIONS

1 litre = 1000 cm³
 1 km = 1000 m
 1 m = 100 cm
 1 ft = 12 in
 1 yd = 3 ft

Square

$$P = 4s$$

$$A = s^2$$

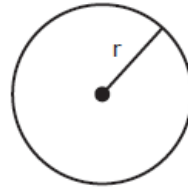


Circle

$$C = 2\pi r$$

or $C = \pi d$

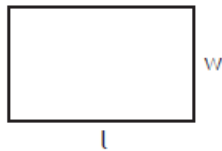
$$A = \pi r^2$$



Rectangle

$$P = 2l + 2w$$

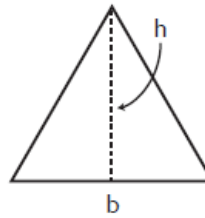
$$A = lw$$



Triangle

$$P = s_1 + s_2 + s_3$$

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

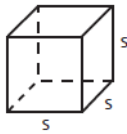


3-D Objects

Cube

$$SA = 6s^2$$

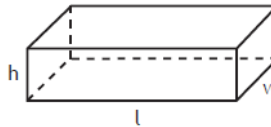
$$V = s^3$$



Rectangular Prism

$$SA = 2lw + 2wh + 2lh$$

$$V = lwh$$



Sphere

$$SA = 4\pi r^2$$

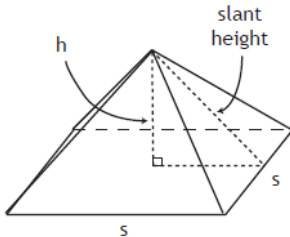
$$V = \frac{4}{3}\pi r^3$$



Square Pyramid

$$SA = A_{\text{base}} + 4A_{\text{side}}$$

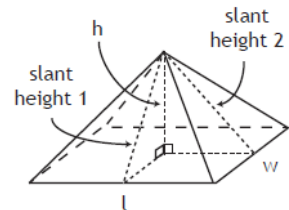
$$V = \frac{1}{3}lwh$$



Rectangular Pyramid

$$SA = A_{\text{base}} + 2A_{\text{side 1}} + 2A_{\text{side 2}}$$

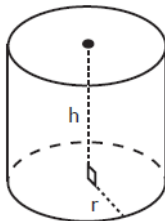
$$V = \frac{1}{3}lwh$$



Right Cylinder

$$SA = 2\pi r^2 + 2\pi rh$$

$$V = \pi r^2 h$$



Right Cone

$$SA = \pi r^2 + \pi rs$$

$$V = \frac{1}{3}\pi r^2 h$$

