Formulae

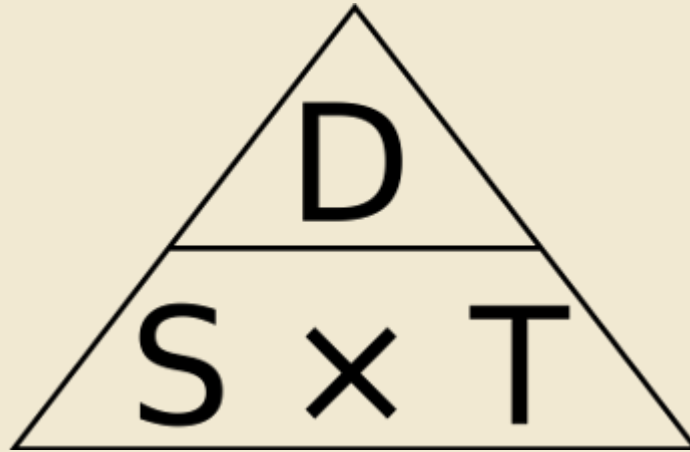Area of a triangle = $\dfrac{b \times h}{2}$

Area of a trapezium = $\dfrac{a+b}{2} \times h$

Area of a circle = πr^2

Circumference of a circle = πD
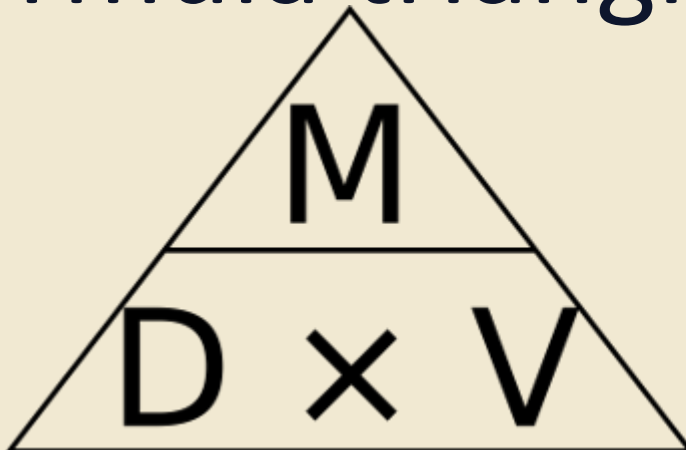
Formulae
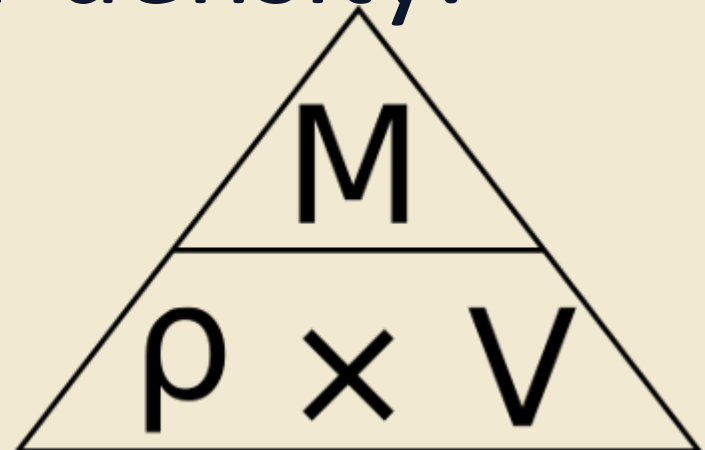
Formula triangle for speed:

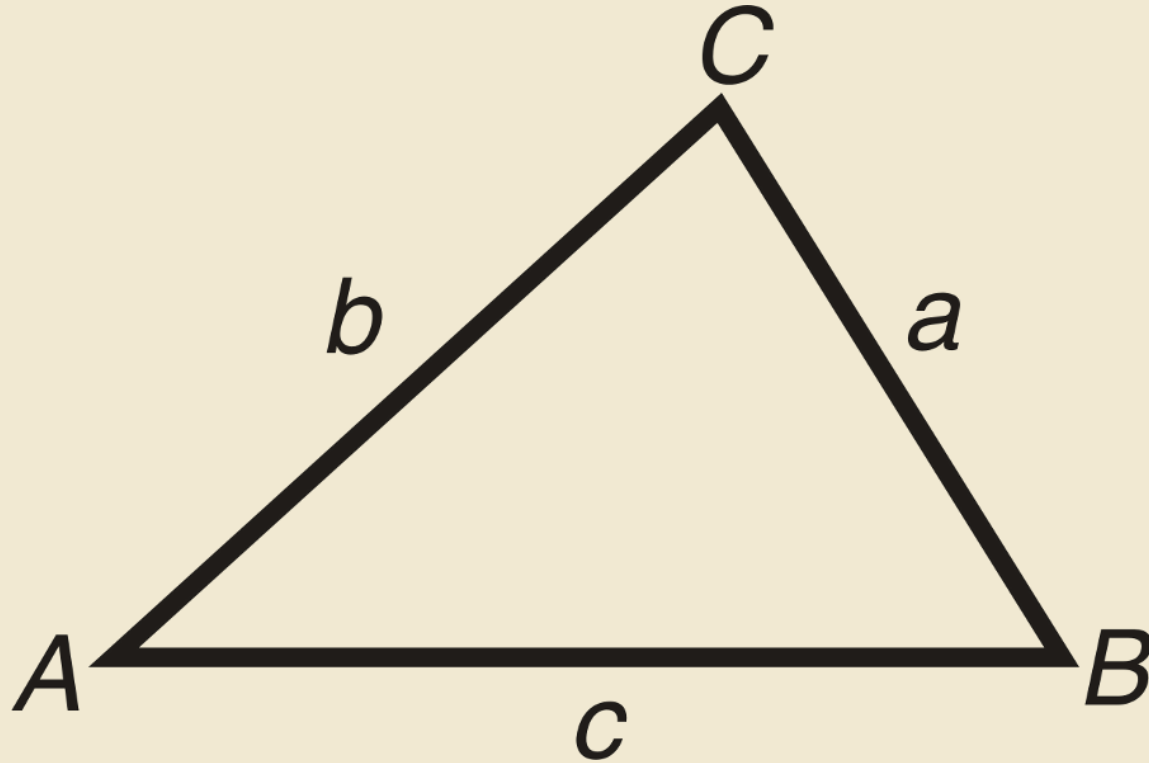Formula triangle for density:

Formulae

Pythagoras' Theorem:
$$a^2 + b^2 = c^2$$

Trig formula for area of a triangle:
$$A = \frac{1}{2}abSinC$$

Formulae

Sine Rule: $\dfrac{a}{SinA} = \dfrac{b}{SinB} = \dfrac{c}{SinC}$

Formulae

Cosine Rule:
$$a^2 = b^2 + c^2 - 2bcCosA$$

Rearranged Cosine Rule:
$$CosA = \frac{b^2 + c^2 - a^2}{2bc}$$

Formulae

Quadratic Formula:

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Where $ax^2 + bx + c = 0$

SUVAT

S = Displacement

U = Initial Velocity
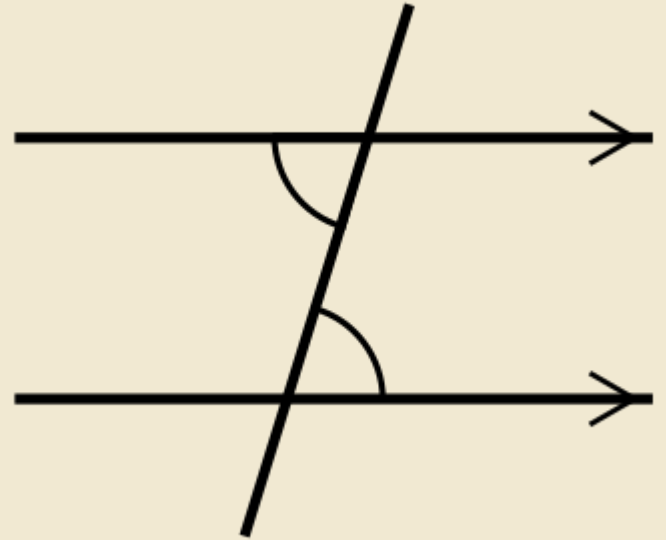
V = Final Velocity

A = Acceleration

T = Time

Exact Trig Values

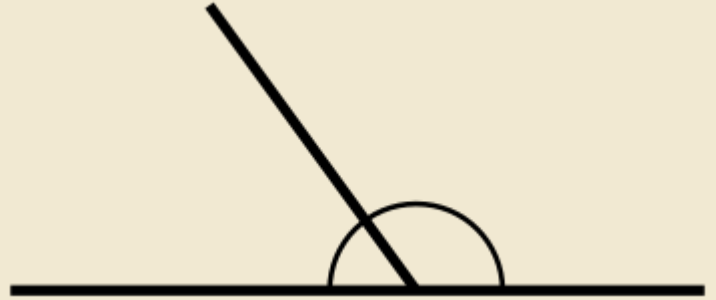|	0°	30°	45°	60°	90°
Sin	0	$\dfrac{1}{2}$	$\dfrac{1}{\sqrt{2}}$ or $\dfrac{\sqrt{2}}{2}$	$\dfrac{\sqrt{3}}{2}$	1
Cos	1	$\dfrac{\sqrt{3}}{2}$	$\dfrac{1}{\sqrt{2}}$ or $\dfrac{\sqrt{2}}{2}$	$\dfrac{1}{2}$	0
Tan	0	$\dfrac{1}{\sqrt{3}}$	1	$\sqrt{3}$	N/A

Angle Facts
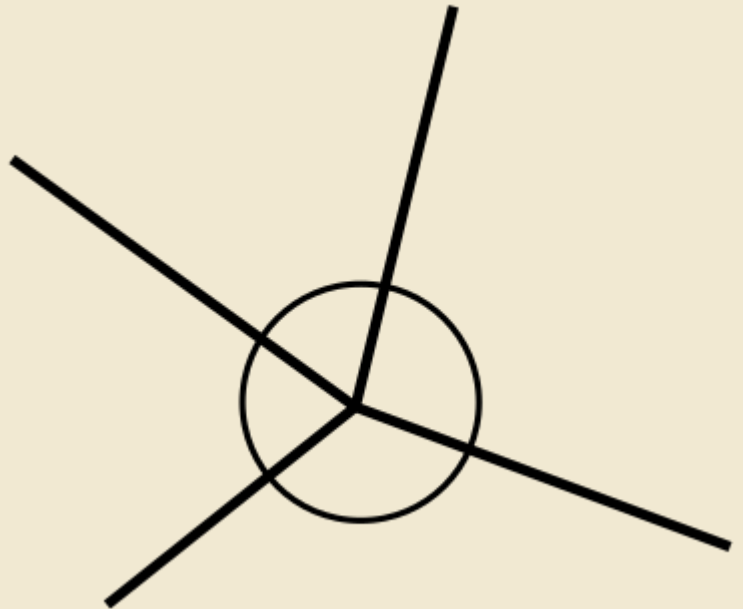
Alternate angles are equal

Corresponding angles are equal
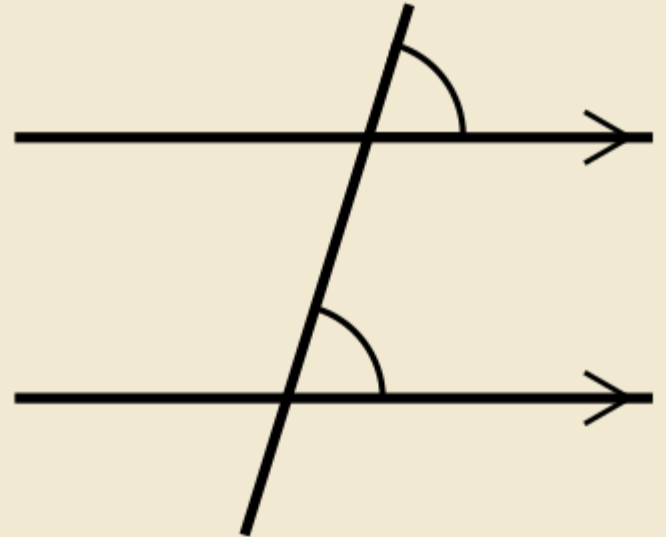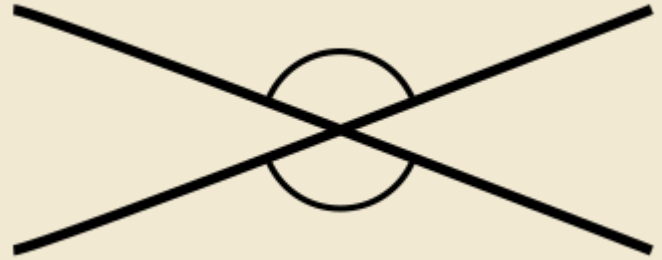
Angle Facts

Angles on a straight line add up to 180°

Angles around a point add up to 360°
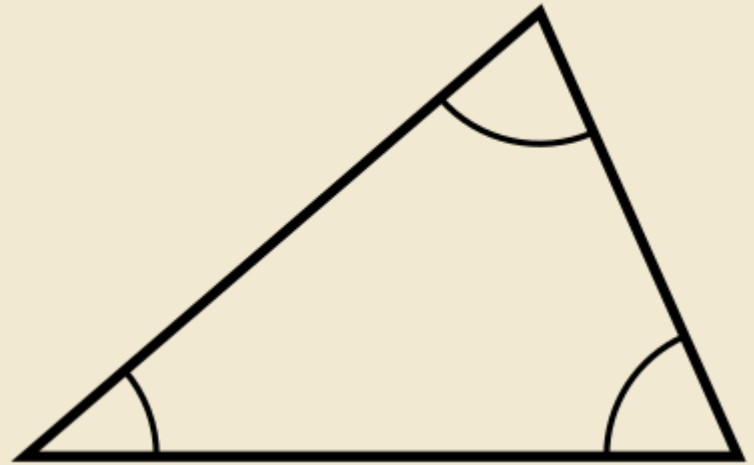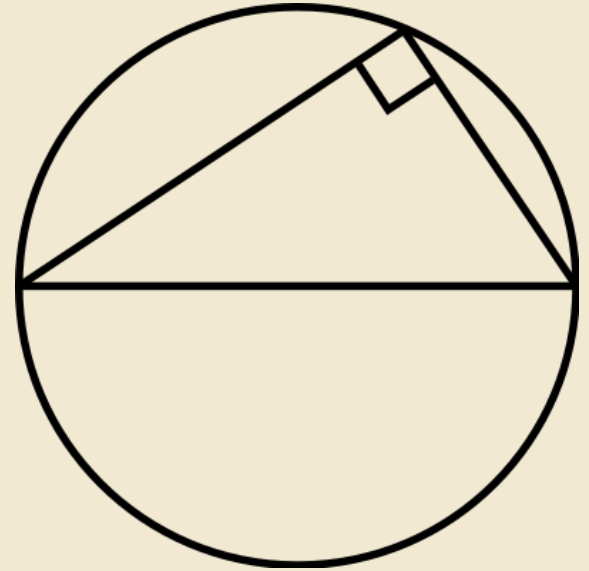
Angle Facts

Opposite angles are equal

Angles in a triangle add up to 180°

Circle Theorems

Angle in a semi-circle is 90°

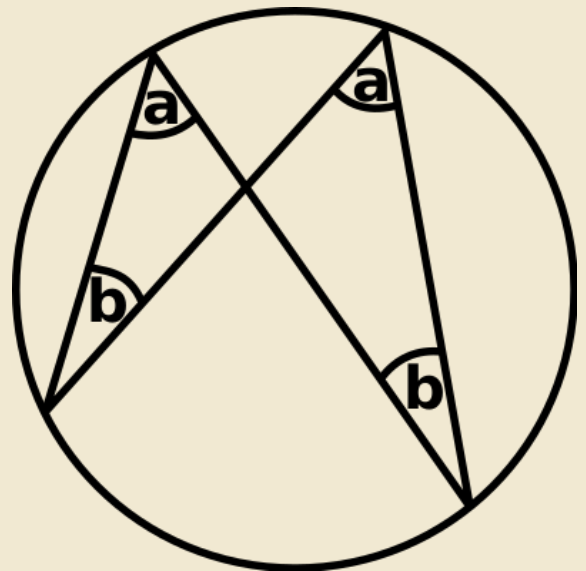Opposite angles in a cyclic quadrilateral sum to 180°

Circle Theorems

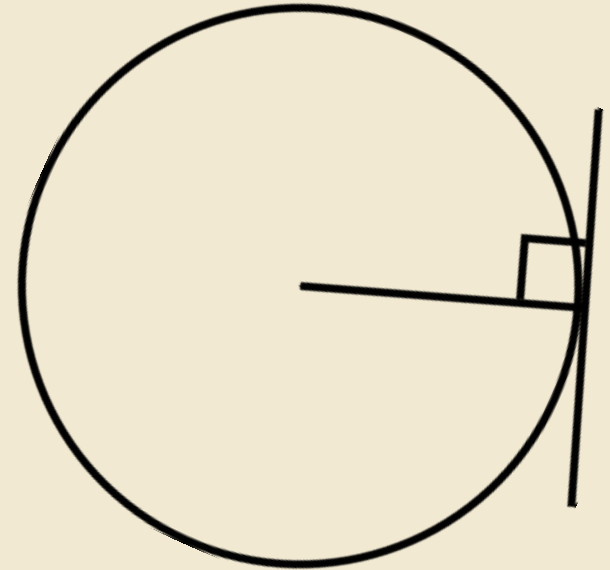Angle at the centre is twice the angle at the circumference
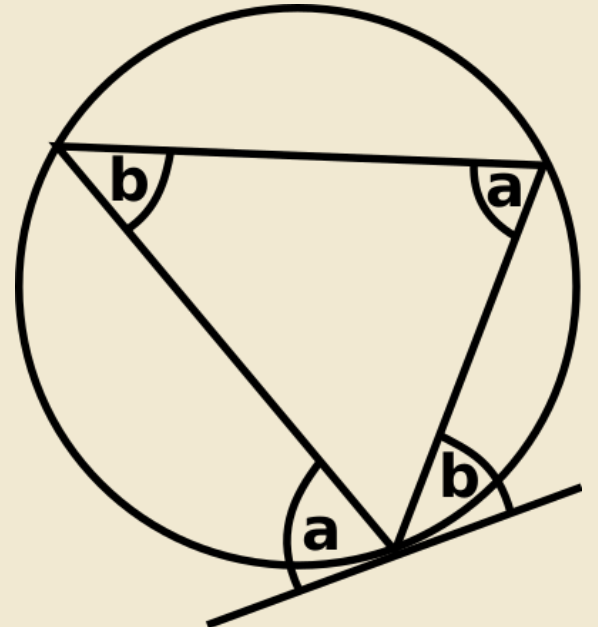
Angles in the same segment are equal

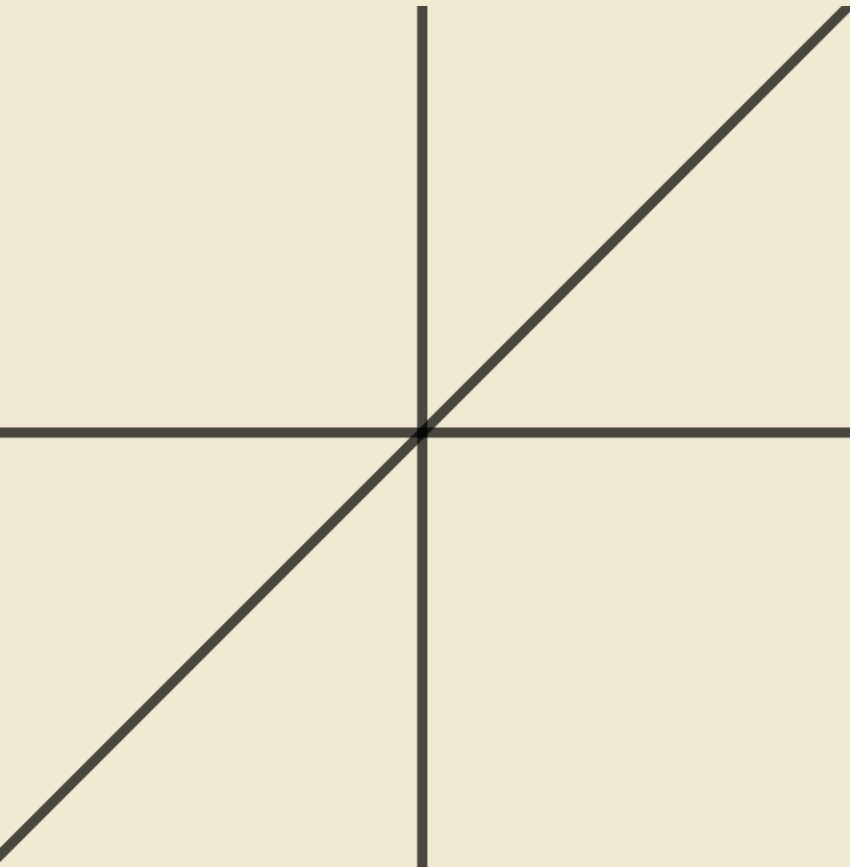# Circle Theorems

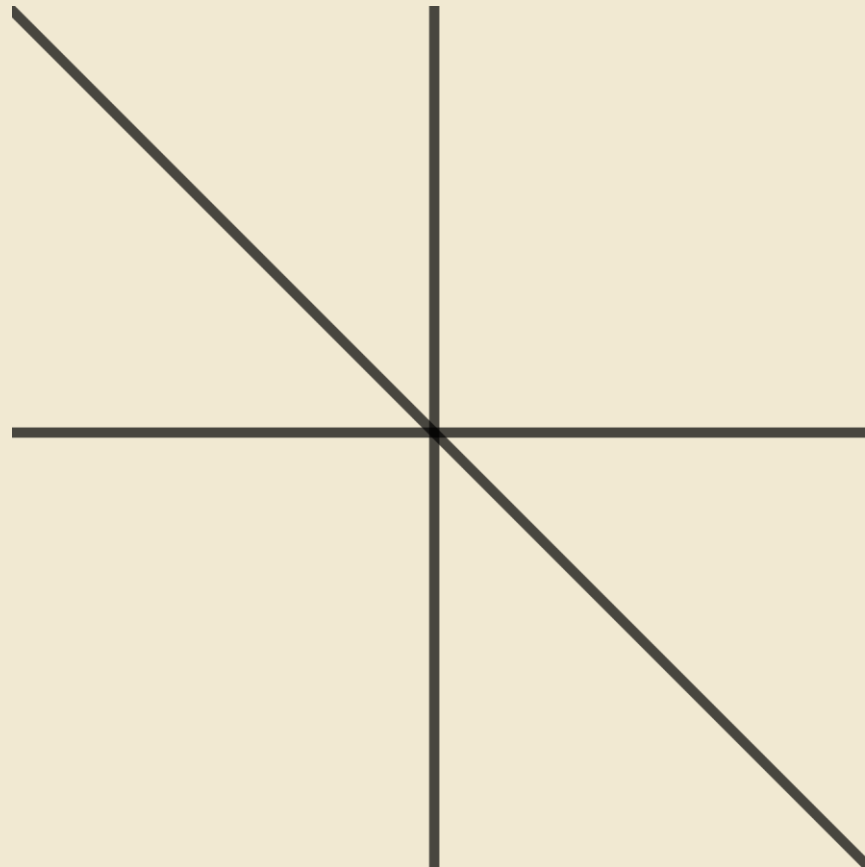Angle between a radius and a tangent is 90°

Alternate segment theorem
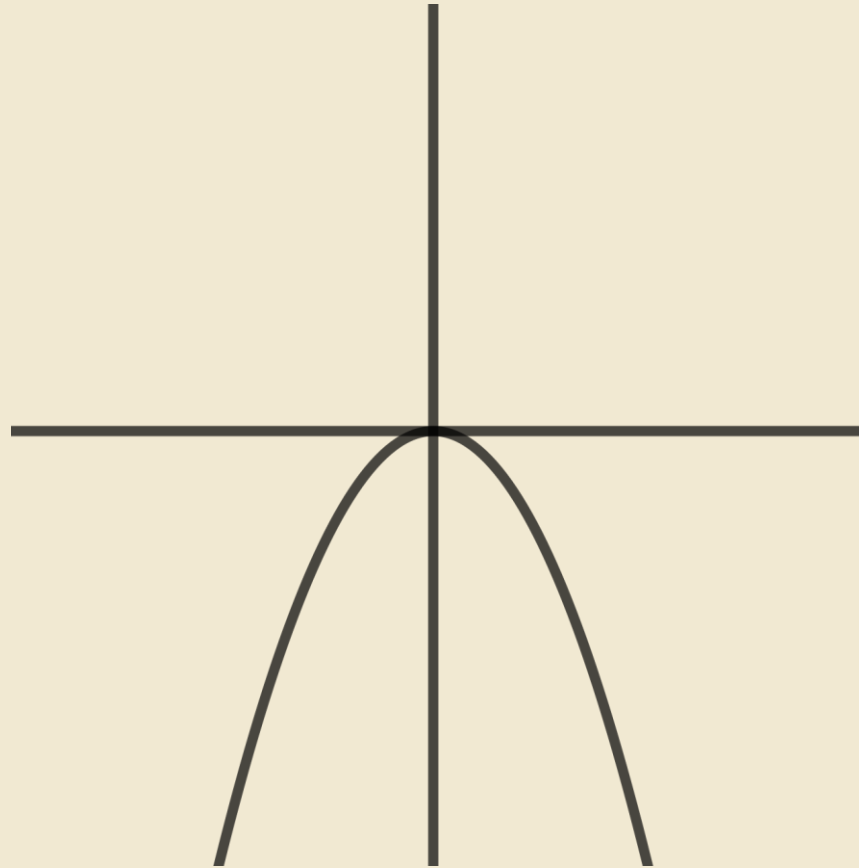
Graphs

$y = x$ $y = -x$

Graphs

$$y = x^2$$
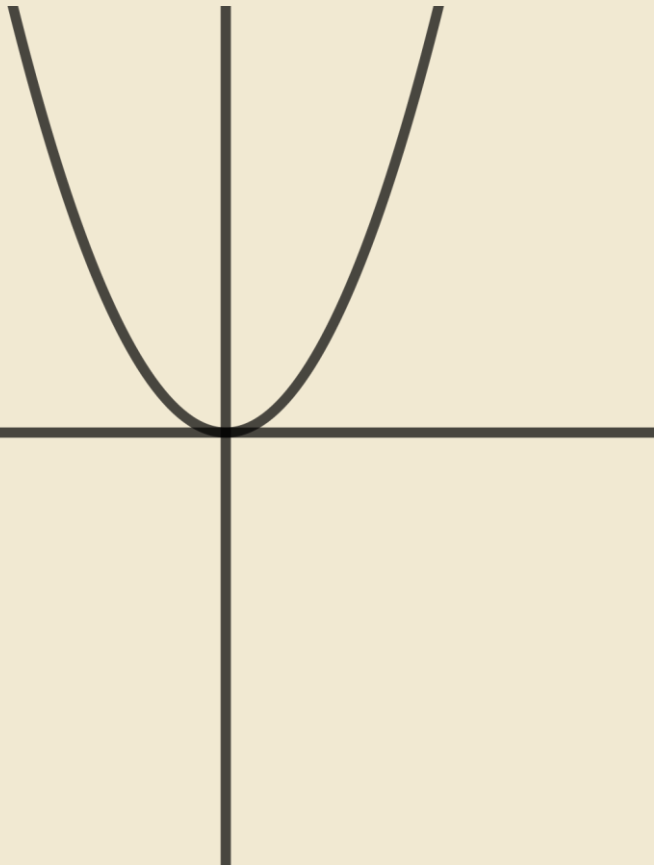
$$y = -x^2$$
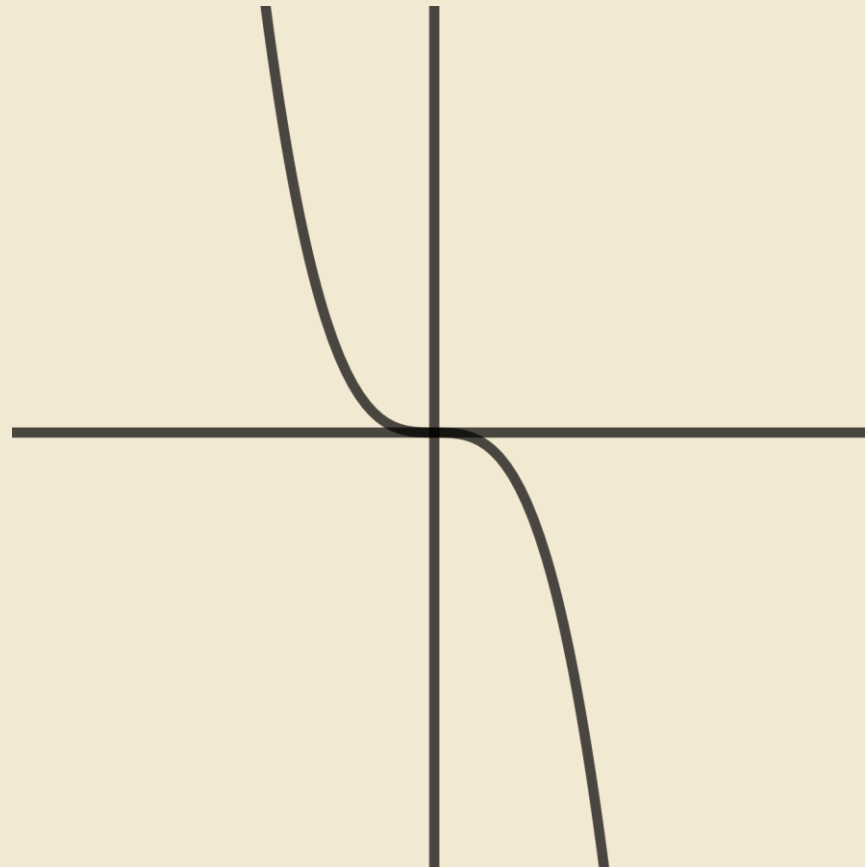
Graphs

$$y = x^3 \qquad\qquad y = -x^3$$

Graphs

$$y = \frac{1}{x} \qquad\qquad y = -\frac{1}{x}$$
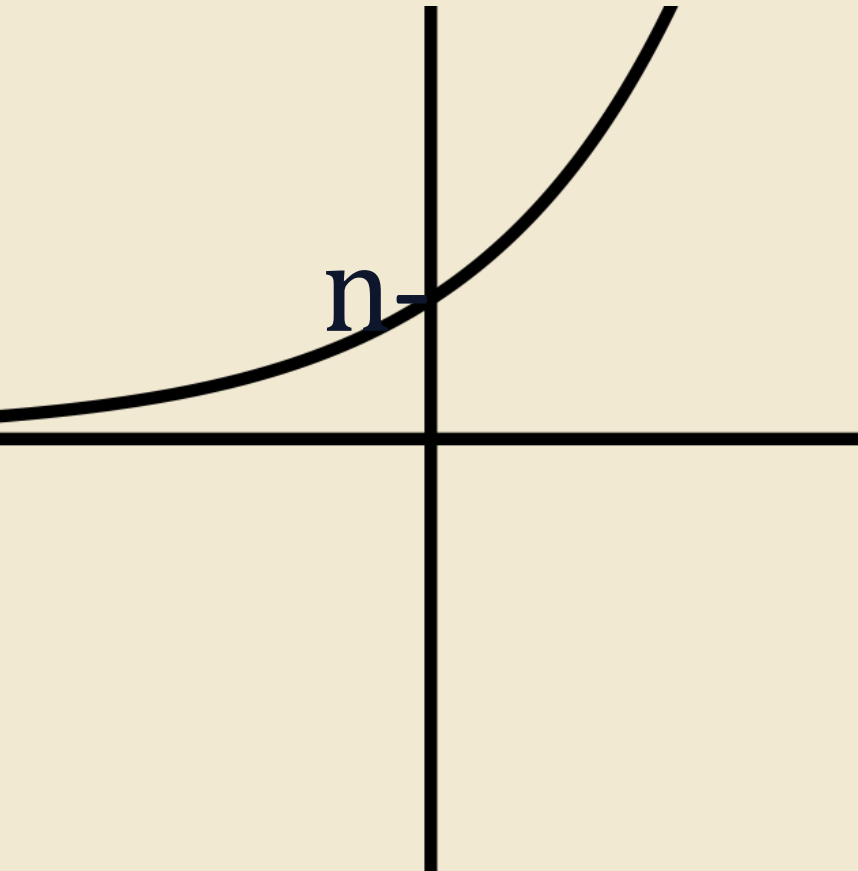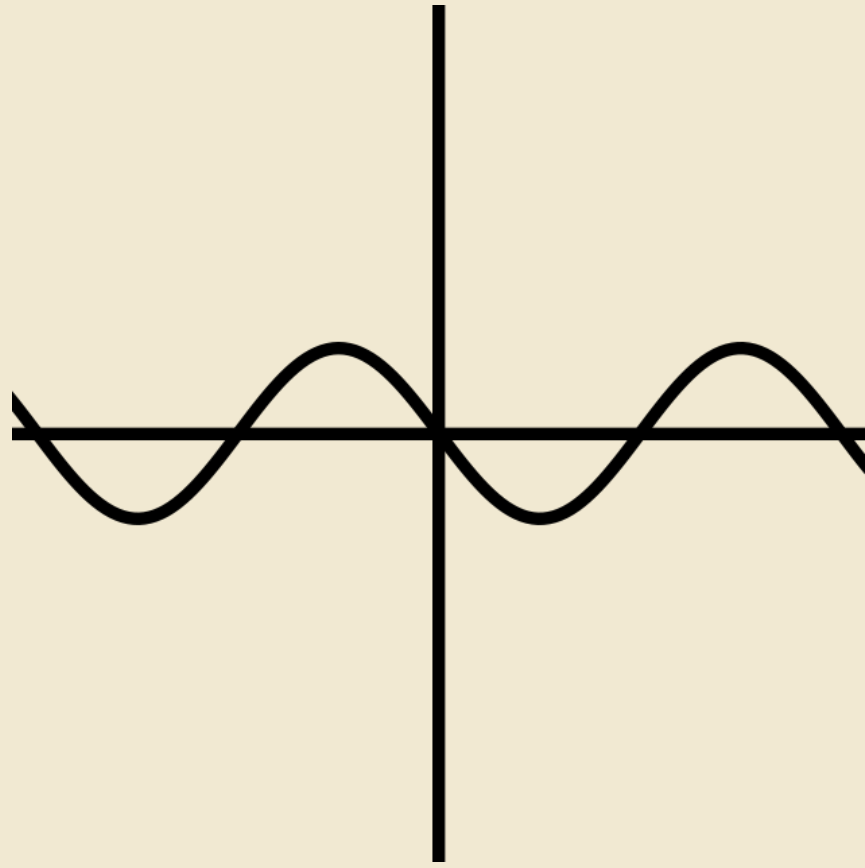
Graphs

$$y = n^x$$

$$y = -n^x$$

n-

−n-

Graphs

$$y = \text{Sin } x \qquad\qquad y = -\text{Sin } x$$

Graphs

$$y = \text{Cos } x \qquad\qquad y = -\text{Cos } x$$

Graphs

$$y = \text{Tan } x \qquad\qquad y = -\text{Tan } x$$