# Geometry Unit 8: Year-to-date Regents review

## Bronx Early College Academy

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13 February 2023 - 17 February 2023

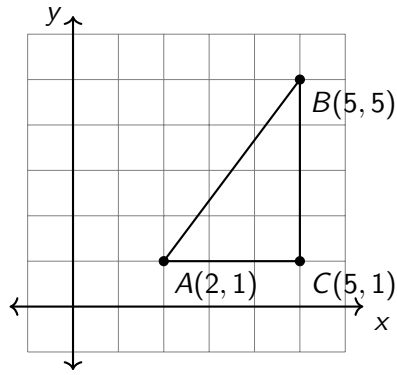
# Learning Target: I can calculate triangle angles

HSG.CO.A.5 Congruence transformations 8.1 Monday 13 February

Do Now

1. Review your Jumprope grades
2. Right $\triangle ABC$ with $m\angle A = 53°$. Find $m\angle B$

Lesson: Internal and external triangle angle measures
Homework: Complete the classwork practice, Deltamath problem set



# Triangle angle theorems, internal and external angle measures

Find this information in your notebook ( October 24th)

**Triangle sum theorem** $\mathrm{m}\angle A + \mathrm{m}\angle B + \mathrm{m}\angle C = 180^\circ$

**External angle theorem** $\mathrm{m}\angle A + \mathrm{m}\angle B = \mathrm{m}\angle BCD$

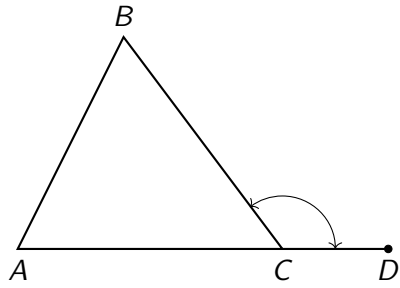
**Linear pair** angles that make a straight line, $180^\circ$

**Supplementary** angles that sum to $180^\circ$

**Complementary** angles that sum to $90^\circ$

**Interior** Inside, internal

**Exterior** Outside, external

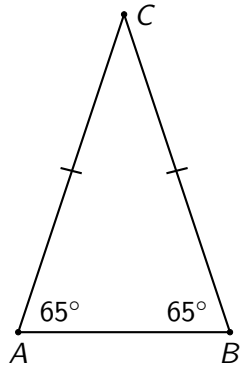


# Learning Target: I can work with parallel lines

HSG.CO.A.5 Congruence transformations 8.2 Tuesday 14 February

Do Now: Isosceles $\triangle ABC$ has two angles measuring 65°. Find the measure of the 3rd angle, m$\angle C$.

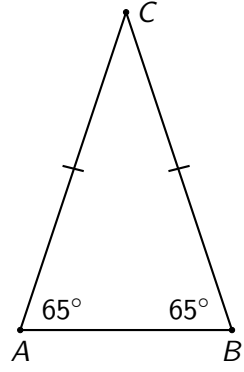
Lesson: Isosceles triangles, parallel lines and transversals
Homework: Complete classwork, Deltamath assignment



# Isosceles base theorem: Sides $\cong$ *iff* angles $\cong$

Isosceles $\triangle ABC$ has two angles measuring $65^\circ$. Find the measure of the 3rd angle, $m\angle C$.

$65^\circ + 65^\circ + x = 180^\circ$
$130^\circ + x = 90^\circ$
$x = 30^\circ$



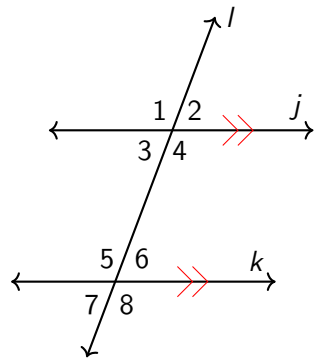
# Two parallel lines and a transversal intersecting them

**Vertical angles** at intersections, opposite angles are $\cong$

**Corresponding angles** are congruent ($\angle 2 \cong \angle 6$)

**Alternate interior** angles inside parallels, not on the same side, are congruent ($\angle 3 \cong \angle 6$)

**Same side exterior** angles outside the transversal, on the same side, are supplementary ($m\angle 1 + m\angle 7 = 180°$)

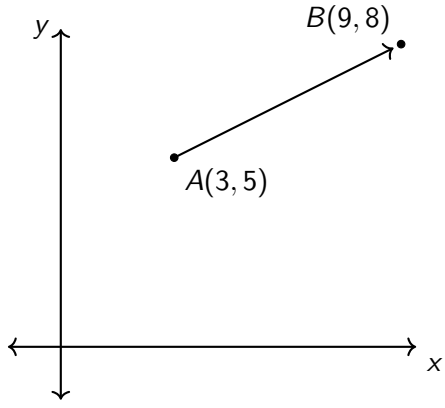


# Learning Target: I can partition a line segment

HSG.CO.A.5 Congruence transformations 8.3 Thursday 16 February

Do Now:
Given $T_{+a,+b}$ maps $(3,5) \rightarrow (9,8)$
Find $a$ and $b$

Lesson: Ratios, partitioning a line segment
Homework: Complete classwork, Deltamath assignment

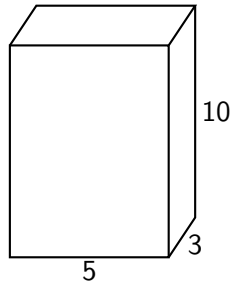


# Learning Target: I can calculate area and volume

HSG.CO.A.5 Congruence transformations 8.4 Monday 27 February

Do Now: Find the volume of the box with dimensions:
length = 5 cm
width = 3 cm
height = 10 cm

Lesson: Area, perimeter, volume, density, solids, cross sections
Homework: Complete classwork, Deltamath assignment

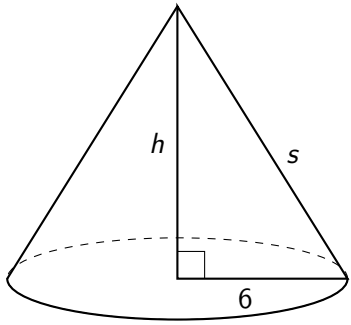


# Use the Regents formula sheet or your notebook for formulas

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

Given a cone with radius $r = 6$ inches, volume $V = 96\pi$ cubic inches, and density $D = 0.0267$ pounds per cubic inch

1. Solve for the height $h$ of the cone
2. Find the *slant height* $s$ using $a^2 + b^2 = c^2$
3. Find the cone's weight $W$ to the *nearest pound*

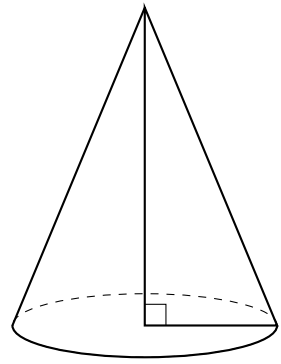



slant height The diagonal length of the side of a cone or pyramid

# The study of 3-dimensional shapes are called solid geometry

What 3-dimensional shape is made when a right triangle is rotated around its longer edge?

cross section the shape made by a plane intersecting a solid

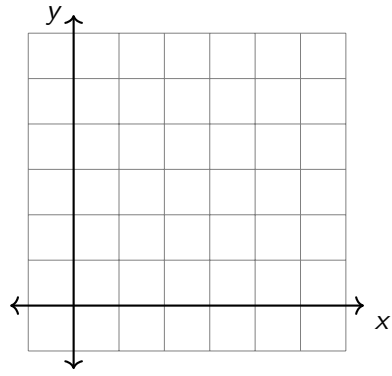


# Learning Target: I can graph linear equations and systems

HSA.REI.C.6 Solve systems of linear equations 8.5 Friday 3 March

Do Now: Graph the line $y = \frac{1}{2}x + 2$

Lesson: slope-intercept form, systems
Homework: Complete classwork, Deltamath assignment



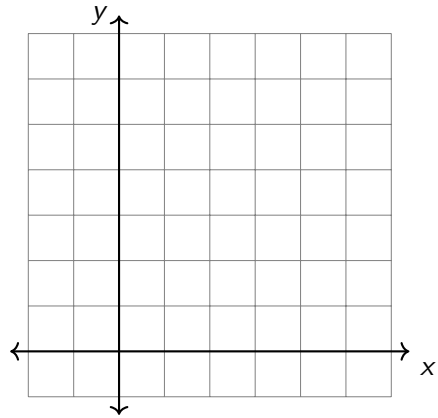
# Solving a system using a graphing calculator

$$f(x) = -\frac{1}{2}x + 6$$

$$g(x) = \frac{3}{4}x + 1$$

**system** two or more equations with the same variables

**intersection** the point where two lines cross, or the $(x, y)$ values that satisfy both equations

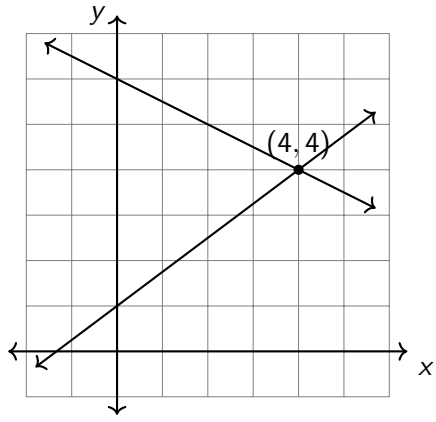


# Solving a system using a graphing calculator

$$f(x) = -\frac{1}{2}x + 6$$

$$g(x) = \frac{3}{4}x + 1$$

$f(4) = -\frac{1}{2}(4) + 6 = -2 + 6 = 4$
$g(4) = \frac{3}{4}(4) + 1 = 3 + 6 = 4$



# Learning Target: I can use slope to solve problems

HSG.CO.A.5 Congruence transformations

8.6 Monday 6 March

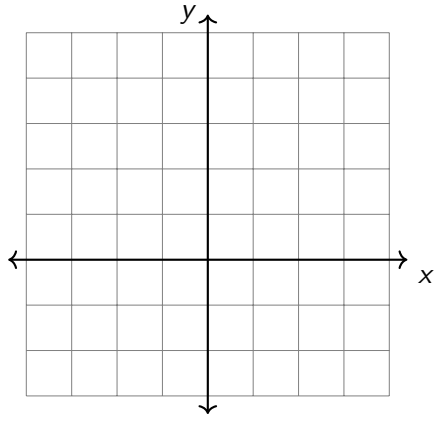
Do Now: Solve the system in your graphing calculator:

$$f(x) = -x + 2$$

$$g(x) = -3x - 2$$

Lesson: Perpendicular and parallel slopes, applications

Homework: Complete classwork, Deltamath assignment



# Learning Target: I can use slope to solve problems

HSG.CO.A.5 Congruence transformations 8.6 Monday 6 March

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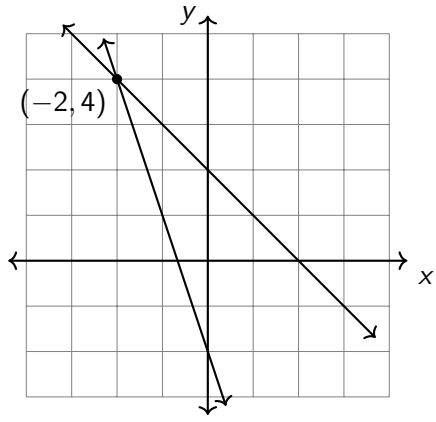

# Learning Target: I can calculate distance in context

HSG.CO.A.5 Congruence transformations

8.7 Tuesday 7 March

Do Now: Find the distance between the intercepts of the line show on the graph

Lesson: Distance formula, applications, simplifying radicals

Homework: Complete classwork, Deltamath assignment