Geometry Unit 8: Year-to-date Regents review

Bronx Early College Academy

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13 February 2023 - 17 February 2023

8.1 Triangle angles	13 February
8.2 Transversals and isosceles triangles	14 February
8.3 Midpoint, segment partition	16 February
8.4 Area, volume, density, solids	27 February
8.5 Analytic geometry graphing	3 March
8.6 Analytic geometry slope applications	6 March
8.7 Analytic geometry distance applications	7 March

Learning Target: I can calculate triangle angles

HSG.CO.A.5 Congruence transformations

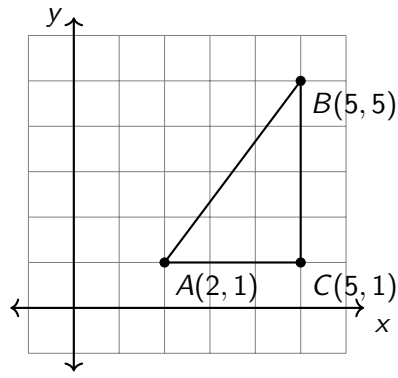
8.1 Monday 13 February

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 $\text{m}\angle A + \text{m}\angle B + \text{m}\angle C = 180^\circ$

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

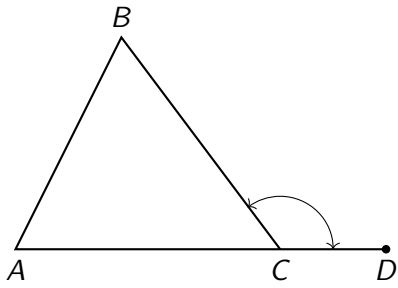
Linear pair angles that make a straight line, 180°

Supplementary angles that sum to 180°

Complementary angles that sum to 90°

Interior Inside, internal

Exterior Outside, external

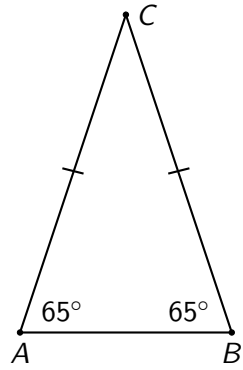


Learning Target: I can work with parallel lines

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$\angle C$.

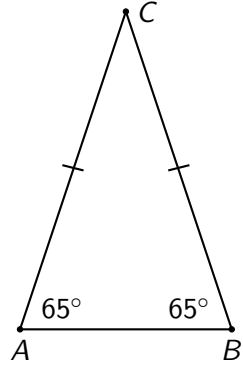
Lesson: Isosceles triangles, parallel lines and transversals
Homework: Complete classwork, Deltamath assignment



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

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

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



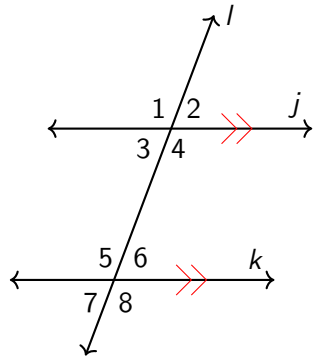
Two parallel lines and a transversal intersecting them

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 ($m\angle 1 + m\angle 7 = 180°$)

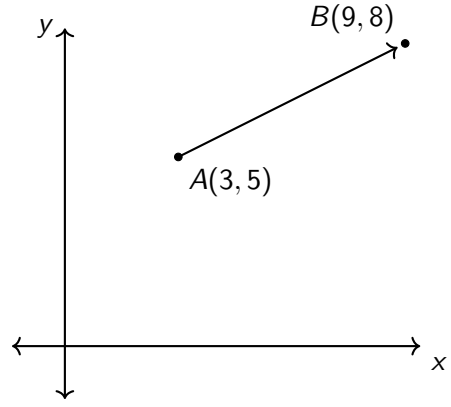


Learning Target: I can partition a line segment

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

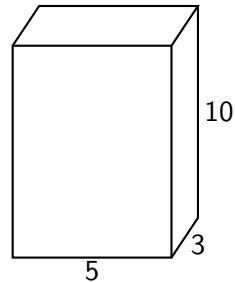


Learning Target: I can calculate area and volume

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

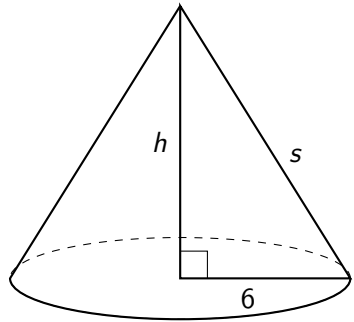


Use the Regents formula sheet or your notebook for formulas

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

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*

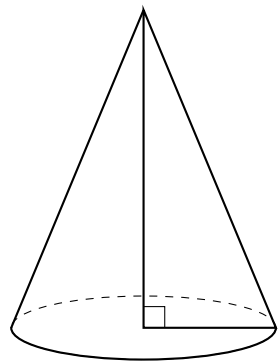


slant height The diagonal length of the side of a cone or pyramid

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



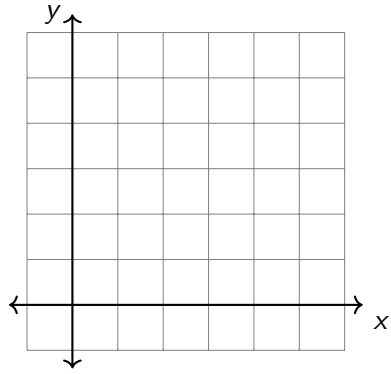
Learning Target: I can graph linear equations and systems

HSG.CO.A.5 Congruence transformations

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



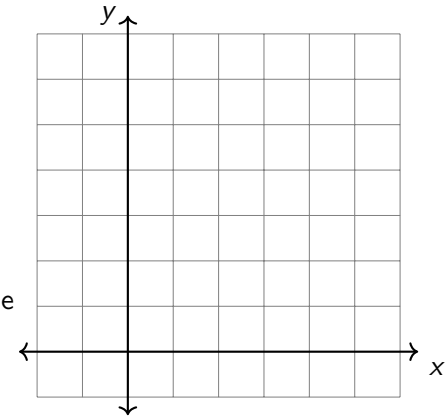
Solving a system using a graphing calculator

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

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

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

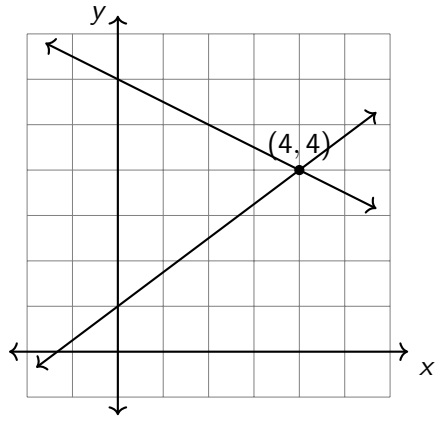


Solving a system using a graphing calculator

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

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

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

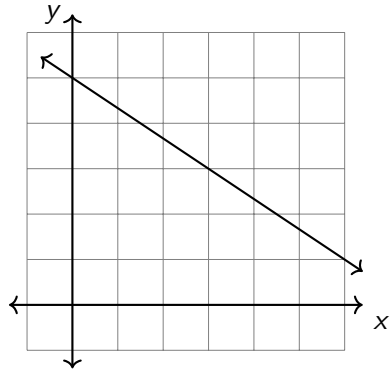


Learning Target: I can use slope to solve problems

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

Do Now: Find the slope and y-intercept of the line

Lesson: Perpendicular and parallel slopes, applications
Homework: Complete classwork, Deltamath assignment

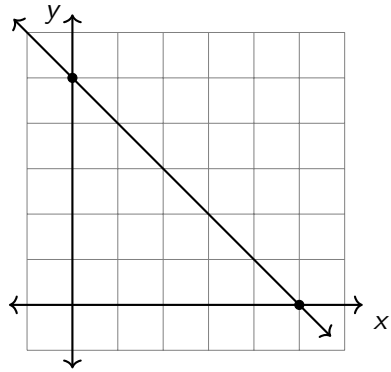


Learning Target: I can calculate distance in context

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