# 12.1 IB Math - Unit 6: Trig & Circular Functions

## Bronx Early College Academy

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6.1 Right triangle review. Tuesday 5 March

6.2 Trigonometry applications. Wednesday 6 March

6.3 The unit circle. Thursday 7 March

6.4 The unit circle. Friday 8 March

6.5 Right triangle review. Monday 11 March

6.6 Deltamath trigonometry review. Tuesday 12 March

# GQ: How do we define and calculate right triangle measures?

CCSS: HSG.SRT.C.8 Use trigonometric ratios to solve right triangles in applied problems

6.1 Tuesday 5 March

## Do Now: Calculator integration fluency

For each: sketch, solve for $f(x) = g(x)$, and find the area between the curves (write down the integration expression)

1. $f(x) = x$, $g(x) = x^2$
2. $f(x) = -x^2 + 2$, $g(x) = -1$
3. $f(x) = x^3 - 9x$, $g(x) = \sin x$

Lesson: Trig ratios, special triangles' values p. 362-9

Practice: Calculator use, Examples #1, 2 p. 365

Exam review; Reminder: complete exploration papers, parent conferences

Homework: Part 2 take-home exam: Integration, no calculator

# GQ: How do we apply trigonometry to situations?

CCSS: HSG.SRT.C.8 Use trigonometric ratios to solve right triangles in applied problems

6.3 Wednesday 6 March

## Do Now: Solving triangles

1. Exercise 11B #2, p. 368

Lesson: Compass directions and modeling situations p. 369-373
Exam review

Homework: Trig IB papers problem set, handout

# GQ: How do we use periodic functions?

CCSS: HSF.TF.A.3 Extend trig functions with the unit circle 6.4 Thursday 7 March

Do Now: Create a unit circle and label the standard angles with their coordinate pairs.

1. *Medium* Find the values of $\sin 30°$, $\sin 45°$, & $\sin 60°$
2. *Spicy* Find $\sin \frac{\pi}{6}$, $\cos \frac{3\pi}{4}$, & $\tan -\frac{\pi}{3}$

Lesson: Periodic functions
Task: Work homework problems on board
Assessment: problem set mark scheme
Homework: Sine curves & mixed exam problems

# GQ: How do we use periodic functions?

CCSS: HSF.TF.A.3 Extend trig functions with the unit circle 6.5 Friday 8 March

## Do Now: Sketch the periodic function $f(x) = \sin x$

1. Label the $x$-axis with multiples of $\pi$, including standard fractions in the first quadrant
2. Mark the $y$-axis with the values of the standard angles (positive and negative).
3. Mark points on the curve at the standard angles.

Homework review

Lesson: Applications calculating the period as $\frac{2\pi}{b}$
Task: Work homework problems on board
Assessment: problem set mark scheme
Homework: Trig & mixed exam problems

# GQ: How do we use periodic functions?

CCSS: HSF.TF.A.3 Extend trig functions with the unit circle 6.6 Monday 11 March

## Do Now: Calculator integration fluency

Sketch, solve for $f(x) = g(x)$, and find the area between the curves (write down the integration expression and calculate)

1. $f(x) = x$ for $x > 0$, $g(x) = 2\sin x$
2. $f(x) = \sqrt{x+1}$, $g(x) = \frac{1}{2}(x+1)$
3. $f(x) = \sqrt{4-3x^2}$, $g(x) = 0$
4. The volume of #3 rotated 360° around the $x$-axis

Lesson: Test review, work problems on board

Homework: Trig & mixed exam problems

# GQ: How do we define and calculate right triangle measures?

CCSS: HSG.SRT.C.8 Use trigonometric ratios to solve right triangles in applied problems

6.2 Tuesday 5 March

## Do Now: Special triangle trig (exact) values, no calculator

1. *Medium* Find the values of $\sin 30°$, $\sin 45°$, & $\sin 60°$
2. *Spicy* Find $\sin \frac{\pi}{6}$, $\cos \frac{3\pi}{4}$, & $\tan -\frac{\pi}{3}$

Exam review
Lesson: Deltamath trigonometry (& calculus) review
Homework: Complete Deltamath problem set