12.1 IB Math - Unit 9: Probability

Bronx Early College Academy

Christopher J. Huson PhD

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7.1 Venn diagrams, Monday 18 March

7.2 Deltamath probability review. Tuesday 19 March

7.3 Expected value, Wednesday 20 March

7.4 Conditional probability, trees with & without replacement, Thursday 21 March

7.5 Binomial distribution, Friday 22 March

7.6 Binomial distribution, Monday 25 March

GQ: How do we notate sample spaces with Venn diagrams?

CCSS: HSS.CP.A.3 Understand conditional probability 7.1 Monday 18 March

Do Now: Draw a Venn diagram of these 110 students:

- 25 students took physics
- 45 students took biology
- 48 students took mathematics
- 10 students took physics and mathematics
- 8 students took biology and mathematics
- 6 students took biology and physics
- 5 students took all three subjects

How many took biology, but neither physics nor mathematics?
How many students did not take any of the three subjects?

Lesson: Sets, complements, union, intersection, empty set

Homework: Problem set

GQ: How do we notate sample spaces with Venn diagrams?

CCSS: HSS.CP.A.3 Understand conditional probability 7.2 Tuesday 19 March

Do Now Quiz: Trig, calculus practice, with calculator

1. *Medium* Middling exam problems
2. *Spicy* Middling and extended exam problems

Lesson: Deltamath probability (trigonometry & calculus) review
Homework: Complete Deltamath problem set, review quiz answers

GQ: How do we calculate expected value?

CCSS: HSS.MD.A.3 Develop a probability distribution for a random variable 7.3

Wednesday 20 March

Do Now: Algebra practice, with calculator

Lesson: Expected value

Homework: Problem set

GQ: How do we add the probabilities of multiple events?

CCSS: HSS.CP.A.3 Understand conditional probability 7.4 Thursday 21 March

Do Now Quiz: Trig, calculus practice, with calculator

1. *Medium* Middling exam problems
2. *Spicy* Middling and extended exam problems

Lesson: Conditional probability, trees with & without replacement
Homework: Problem set

GQ: How do we model a series of events?

CCSS: HSS.MD.A.3 Develop a probability distribution for a random variable 7.5 Friday 22 March

Do Now: Make a tree representing three coin flips

1. What is the probability of each outcome?
2. If order doesn't matter, how can the results be consolidated into a probability distribution of the total number of heads?

Lesson: Binomial expansion p. 186-8
Homework: Problem set

GQ: How do we model a series of events?

CCSS: HSS.MD.A.3 Develop a probability distribution for a random variable 7.6 Monday 25 March

Do Now: Sequences review, Exercise 6L #1-4 p. 182-3

1. Use the sequences formulas on the formula sheet
2. The equation for compound interest (try to remember it first) is $P_n = P_0(1 + \frac{i}{c})^{cn}$

Lesson: Binomial expansion p. 186-8
Assessment: Exercise 6N p. 187
Homework: Exercise 6O p. 188