

Patterns

Increasing

Decreasing

$\oplus$

$\otimes$

$\ominus$

$\oslash$

$\oplus 6$

17, 23, 29, 35, 41, ...

$\curvearrowright$   $\curvearrowright$   $\curvearrowright$   $\curvearrowright$   
+6 +6 +6 +6

$\boxed{47, 53}$

1.01, 1.001, 1.0001, ...

$\boxed{1.00001}$

12, 14, 18, 24, 32, ...

$\curvearrowright$   $\curvearrowright$   $\curvearrowright$   $\curvearrowright$   
+2 +4 +6 +8

$\boxed{42, 54}$

Describe the pattern.

Adding by consecutive even numbers

1.) 2, -4, 8, -16, 32, ...

$\otimes -2$

$\boxed{-64, 128}$

Describe the pattern.

Give next two terms.

$\otimes -2$

2.) 1, 2, 4, 7, 11, 16, ...

$\curvearrowright$   $\curvearrowright$   $\curvearrowright$   $\curvearrowright$   $\curvearrowright$   
1 2 3 4 5

$\boxed{22, 29}$

Add consecutive counting numbers

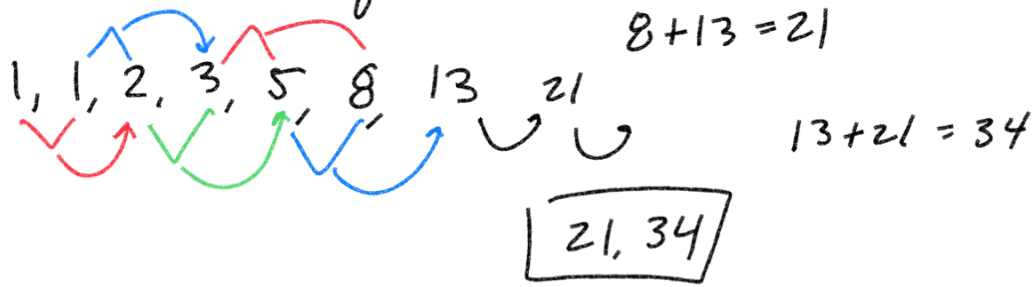
3.) 32, 48, 56, 60, 62, ...

$\curvearrowright$   $\curvearrowright$   $\curvearrowright$   $\curvearrowright$   
16 8 4 2

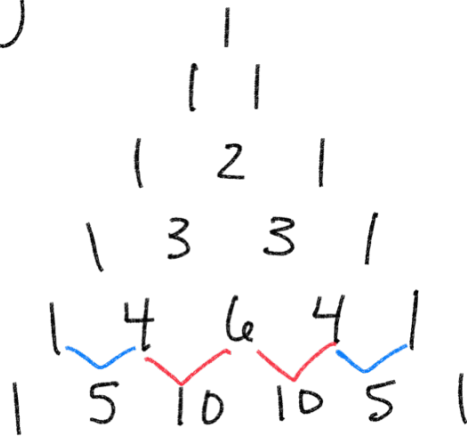
$\boxed{63, 63.5}$

Each difference is halved

# Fibonacci Sequence



# Pascal's Triangle



# Challenge

OA, UEA, EEA, UA, —, —, —

# 1-2 Points, Lines, and Planes

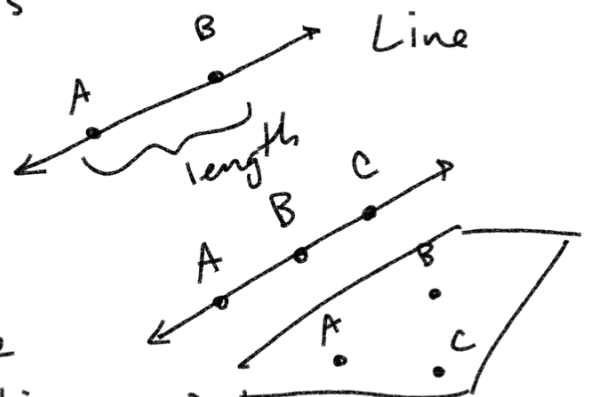
Point • 0 dimensions singularity

Line - made up of 2 points  
1 dimension

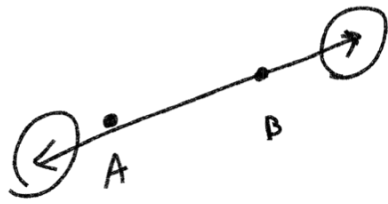
Plane - made from either

1.) three noncollinear points  
not on the same line

2.) one line and one noncollinear point. 2 dimensions

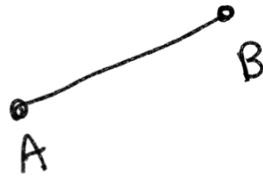


Line  
 $\overleftrightarrow{AB}$



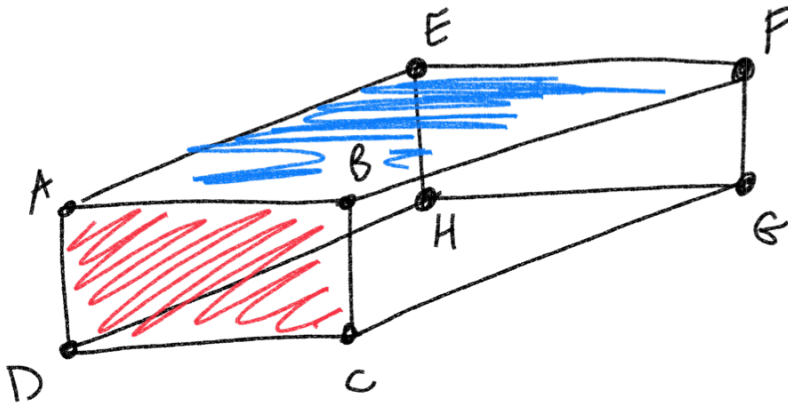
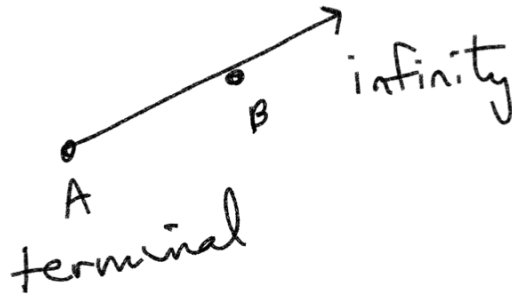
arrow mean the line goes to infinity (on both sides)

Segment  
 $\overline{AB}$



terminal on both sides

Ray  
 $\overrightarrow{AB}$



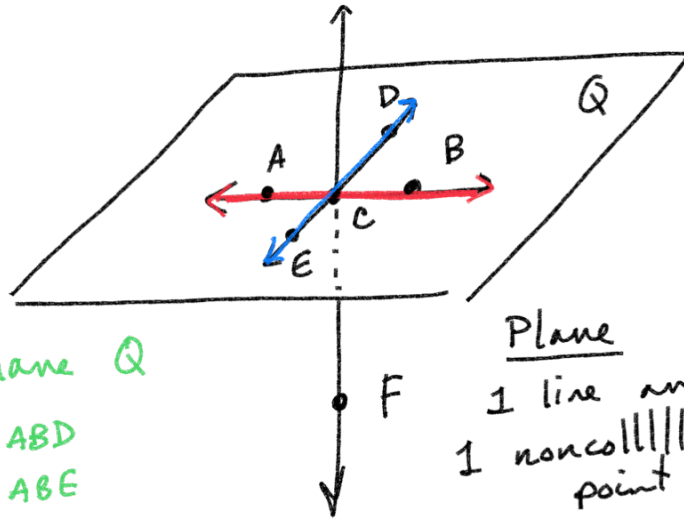
Plane  
ABD

Plane  
ABEF  
Plane  
ABE  
line noncollinear point

Plane Q

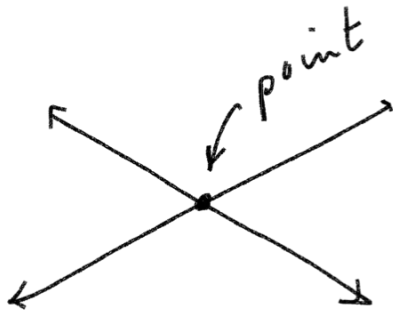
$\overleftrightarrow{AB}$   
 $\overleftrightarrow{AC}$   
 $\overleftrightarrow{BC}$

Line  
 $\overleftrightarrow{DC}$   
 $\overleftrightarrow{ED}$   
 $\overleftrightarrow{CE}$

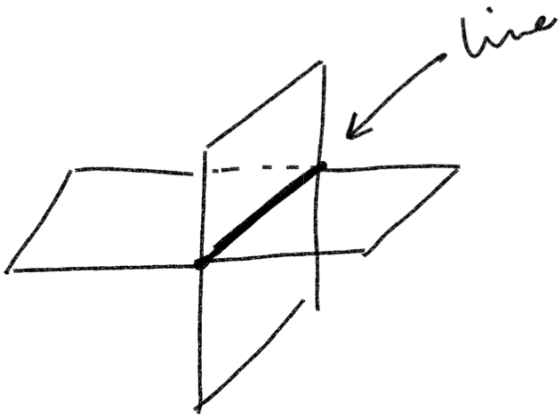


Plane Q  
ABD  
ABE  
CAE

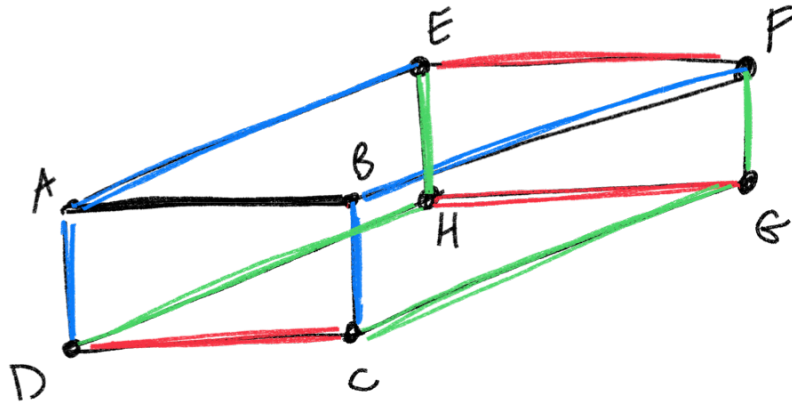
Plane  
1 line and  
1 noncollinear  
point



Intersection of two lines  
point



Intersection of two  
planes  
line



Line  $\overline{AB}$

Parallel

$\overline{HG}, \overline{EF}, \overline{DC}$

Intersect  
(perpendicular)

$\overline{FB}, \overline{AE}, \overline{AD}, \overline{BC}$

Skew

$\overline{EH}, \overline{FG}, \overline{CG}, \overline{DH}$

Parallel lines have the

- same slope
- exist on the same plane
- no intersections.