

1. Goals



By the end of this unit, students:

- understand the concepts and techniques in combinatorics, geometry and vectors
- apply reasoning skills and solve problems in combinatorics, geometry and vectors
- communicate their arguments and strategies when solving problems
- construct proofs in a variety of contexts including algebraic and geometric
- interpret mathematical information and ascertain the reasonableness of their solutions to problems.

This week's focus:

- Vectors – introduction.
- Polygon of vectors & Position vectors
- Linear Combination of non-parallel vectors & Vector components

2. Theoretical Components

STEP 1:

Readings:

Read examples: ABOUT/RESOURCES/2021 S1/WK13

Vectors: <http://goo.gl/dFhTAv>

Position Vectors: <http://goo.gl/0vurhL>

Watch videos with examples:

Vectors:

Intro: <https://goo.gl/ZrcGL7>

+/-: <https://goo.gl/PGOJMg>

3. Practical Components

STEP 2:

Attempt all the questions:

ABOUT/RESOURCES/2021 S1/WK13 Vectors

4. Investigation

OPQR is a parallelogram. Let $u = \overrightarrow{OP}$ and $v = \overrightarrow{OR}$.
Let M be the midpoint of PQ.

a Express \overrightarrow{OQ} and \overrightarrow{OM} in terms of u and v .

b Express \overrightarrow{RM} in terms of u and v .

c If T is a point on \overrightarrow{RM} and $\overrightarrow{RT} = \frac{2}{3}\overrightarrow{RM}$, express \overrightarrow{RT} in terms of u and v .

d Find \overrightarrow{OT} and hence show that T lies on the line segment OQ.

e Find the ratio OT : TQ.

20 marks

5. QFO

Quiz/Forum/Other

Do this quiz: <https://goo.gl/RU6gmV>