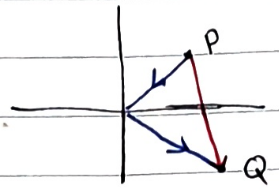
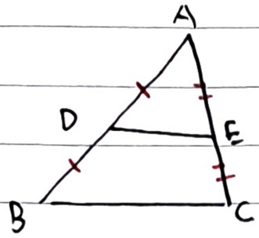
Week 1 Review

KEY

$$\overrightarrow{PQ} = \overrightarrow{OQ} - \overrightarrow{OP}$$





Given:
- D is midpoint of $\overline{AB}$
- E is midpoint of $\overline{AC}$

Show: $\overline{DE} \parallel \overline{BC}$

$\overrightarrow{DE} = \overrightarrow{AE} - \overrightarrow{AD}$

$2\overrightarrow{DE} = 2\overrightarrow{AE} - 2\overrightarrow{AD}$

$2\overrightarrow{DE} = \overrightarrow{AC} - \overrightarrow{AB} = \overrightarrow{BC}$

$2\overrightarrow{DE} = \overrightarrow{BC}$

KEY

* scalar multiplication of one vector is parallel to that vector. *
(있)

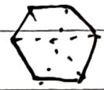
유형

1) commutativity, distributivity of
   - vector addition (subtraction)
   - scalar multiplication (division)

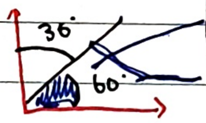
2) Find unit vector
   magnitude: 1, direction: same as orig vector.

3) Find magnitude, direction
   $\underset{\sim}{v} = [x, y]$ $\sqrt{x^2+y^2}$ $\tan^{-1}\left(\frac{y}{x}\right)$
   <무식하게 바로 arcsin arccos 쓰지 않기~>

4) 도형



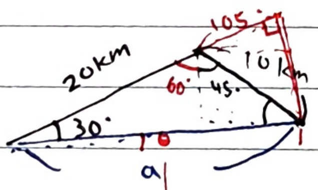
- 보조선 그어서 complement vector 찾기!



"of"
60° northeast
30° eastnorth
"of"

refers to same angle

오답노트 ← tut 당시 sine rule cosine rule 몰랐음



$a^2 = [10\sin(\theta)]^2 + (20 + 10 \times \cos(180-\theta))^2$ ($\sin(\theta) = \sin(180-\theta)$, $\cos(180-\theta) = -\cos(\theta)$)

$10^2\sin^2\theta + (20^2 + 10^2\cos^2\theta - 40(10)\cos\theta)$

$= 10^2(\sin^2\theta + \cos^2\theta) + 20^2 - 40(10)\cos\theta$

$= 10^2 + 20^2 - 2(20)(10)\cos\theta$) 법칙

) 코사인 법칙 증명

~~500 - 400cos(105°) = 603.5~~

$a = \sqrt{603.5} \approx 24.567 \approx 25$

By sine rule, $\frac{\sin(30-\theta)}{10} = \frac{\sin(105)}{24.57}$

$\theta = 6.85°$