Exercises Vectors

7. Det a set of points

A, B $AB = 8$ I = milieu $[AB]$

Ensemble de M vérif $\overrightarrow{MA} \cdot \overrightarrow{MB} = 10$

$MI^2 - \frac{1}{4} AB^2 = \overrightarrow{MA} \cdot \overrightarrow{MB}$

$MI^2 - \frac{1}{4} AB^2 = 10$

$MI^2 - 16 = 10$

$MI^2 = 26$

$MI = \sqrt{26}$

17. $[PQ] = 10$, R milieu

Det points M $\overrightarrow{MP} \cdot \overrightarrow{MQ} = -6$

$MR^2 - \frac{1}{4} PQ^2 = -6$

$MR^2 - 25 = -8$

$MR^2 = 17$ $MR = \sqrt{17}$

18. $[CD] = 4$, det $\overrightarrow{MC} \cdot \overrightarrow{MD} = -4$

$MI^2 - \frac{1}{4} CD^2 = -4$

$MI^2 - 4 = -4$

$MI^2 = 0$ $MI = 0$

33.

a) $\overrightarrow{BA} \cdot \overrightarrow{BE} = BA \times -\frac{BA}{2}$

b) $\overrightarrow{CF} \cdot \overrightarrow{CD} = CD \times \frac{CD}{2}$

c) $\overrightarrow{AF} \cdot \overrightarrow{AB} = AD \times \frac{AB}{2}$

d) $\overrightarrow{AB} \cdot \overrightarrow{BE} = AB \times \frac{AB}{2}$

e) $\overrightarrow{BF} \cdot \overrightarrow{DC} = DC \times -\frac{DC}{2}$

f) $\overrightarrow{AF} \cdot \overrightarrow{BE} = AF^2$

37.