Question 1-1.5-31

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Question: Find the coordinates of a point P, which lies on the line segment joining the points A(-2,2) and B(2,-4) such that $AP = \frac{3}{7}AB$.

Solution: *P* divides *AB* in ratio 3 : 4 i.e 1 : $\frac{4}{3}$

$$P = \frac{kA + B}{k + 1} \tag{0.1}$$

$$= \frac{\frac{4}{3} {\binom{-2}{2}} + {\binom{2}{-4}}}{\frac{4}{3} + 1} \tag{0.2}$$

$$= \frac{4\binom{-2}{2} + 3\binom{2}{-4}}{4+3} \tag{0.3}$$

$$=\frac{1}{7} \begin{pmatrix} -2\\ -4 \end{pmatrix} \tag{0.4}$$

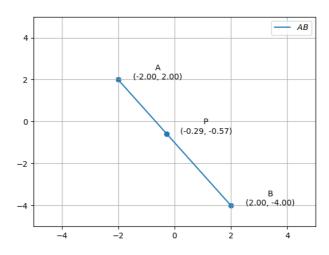


Fig. 0: A plot of all points

Code for this plot

Codes/section.py