

## 1.5.8

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Question:

Find the distance between the points **A**  $(-\frac{7}{3}, 5)$  and **B**  $(\frac{2}{3}, 5)$ . **Solution:**

$$\therefore \mathbf{A} - \mathbf{B} = \begin{pmatrix} -\frac{7}{3} \\ 5 \end{pmatrix} - \begin{pmatrix} \frac{2}{3} \\ 5 \end{pmatrix} = \begin{pmatrix} -3 \\ 0 \end{pmatrix}, \quad (0.1)$$

$$(\mathbf{A} - \mathbf{B})^T (\mathbf{A} - \mathbf{B}) = 9 \quad (0.2)$$

Thus, the desired distance is

$$d = \|\mathbf{A} - \mathbf{B}\| = 3 \quad (0.3)$$

