

Question Number	Scheme	Marks
7 (a)	$\sqrt{((-4)^2 + 8^2)} = \sqrt{80} \text{ km h}^{-1}$ accept exact equivalents or 8.9 or better	M1 A1  (2)
(b)	$\mathbf{p} = (2\mathbf{i} - 8\mathbf{j}) + t(-4\mathbf{i} + 8\mathbf{j})$	B1  (1)
(c)	Equating $\mathbf{j}$ components $-8 + 8t = 12 - 8t$ $t = \frac{5}{4}$ oe	M1 A1 A1  (3)
(d)	Using their $t$ from (c) to find the $\mathbf{i}$ -cpt of $\mathbf{p}$ and $\mathbf{q}$ and subtract them  $10\frac{1}{2} - (-3) = 13\frac{1}{2} \text{ km}$	M1  A1 ft A1  (3) <b>9</b>