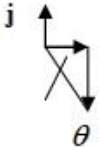


Forces as Vectors - Edexcel Past Exam Questions MARK SCHEME

Question 1 : June 08 Q3

Question Number	Scheme	Marks
(a)	$\tan \theta = \frac{8}{6}$ $\theta \approx 53^\circ$	M1 A1 (2)
(b)	$\mathbf{F} = 0.4(6\mathbf{i} + 8\mathbf{j}) (= 2.4\mathbf{i} + 3.2\mathbf{j})$ $ \mathbf{F} = \sqrt{(2.4^2 + 3.2^2)} = 4$	M1 M1 A1 (3)

Question 2 : Jan 09 Q6

Question Number	Scheme	Marks
(a)	 $\tan \theta = \frac{2}{1} \Rightarrow \theta = 63.4^\circ$ <p style="margin-left: 20px;">angle is 153.4°</p>	M1 A1 A1 (3)
(b)	$(4 + p)\mathbf{i} + (q - 5)\mathbf{j}$ $(q - 5) = -2(4 + p)$ $2p + q + 3 = 0 *$	B1 M1 A1 A1 (4)
(c)	$q = 1 \Rightarrow p = -2$ $\Rightarrow \mathbf{R} = 2\mathbf{i} - 4\mathbf{j}$ $\Rightarrow \mathbf{R} = \sqrt{2^2 + (-4)^2} = \sqrt{20}$ $\sqrt{20} = m8\sqrt{5}$ $\Rightarrow m = \frac{1}{4}$	B1 M1 M1 A1 f.t. M1 A1 f.t. A1 cao (7) [14]



Question 3 : June 09 Q2

Question Number	Scheme	Marks
(a)	$\tan \theta = \frac{p}{2p} \Rightarrow \theta = 26.6^\circ$	M1 A1 (2)
(b)	$\mathbf{R} = (\mathbf{i} - 3\mathbf{j}) + (p\mathbf{i} + 2p\mathbf{j}) = (1 + p)\mathbf{i} + (-3 + 2p)\mathbf{j}$	M1 A1
	\mathbf{R} is parallel to $\mathbf{i} \Rightarrow (-3 + 2p) = 0$	DM1
	$\Rightarrow p = \frac{3}{2}$	A1 (4)
		[6]