Mark Scheme Circular Motion Paper Questions
Jan 2002—Jan 2010 (old spec)

Question 2		
(a)	speed is magnitude of velocity **or** speed is a scalar but acceleration (or velocity) is a vector ✓ direction changes continuously ✓ velocity is changing ✓ **Q2 Jun 2007** acceleration is rate of change of velocity ✓ **or** speed is magnitude of velocity **or** speed is a scalar but acceleration (or velocity) is a vector ✓ force (or acceleration) acts towards centre of circle ✓ force (or acceleration) is always perpendicular to velocity **or** has no component in direction of velocity ✓ force changes direction of velocity but not its magnitude ✓	**max 3**
(b)	$\omega\ (= 2\pi f) = 2\pi \times (78/60) = 8.17\,(\text{rad s}^{-1})$ ✓ $F\left(=\frac{mv^2}{r}\right) = m\omega^2 r$ ✓ gives $r\left(=\frac{F}{m\omega^2}\right) = \frac{0.50}{0.10 \times 8.17^2}$ ✓ $r = 7.5 \times 10^{-2}\,\text{m}$ ✓	**4**
	Total	**7**