16 (a)	$x(x+4)=12(12+x)$	Shown	3	M1	
	$x^2+4x=144+12x$			M1	for at least one correct expression
				A1	for completion
(b)	$x=\frac{--8\pm\sqrt{(-8)^2-4\times1\times(-144)}}{2}$ or $\frac{8\pm\sqrt{8^2-4\times1\times(-144)}}{2}$ or $\frac{8\pm\sqrt{-8^2-4\times1\times(-144)}}{2}$	20.6	4	M1	M1 for correctly substituting into the quadratic formula condone one sign error in substitution; allow partial correct evaluation
	$\frac{8\pm\sqrt{640}}{2}$ **or** $\frac{--8\pm\sqrt{(-8)^2--576}}{2\times1}$ **or** $\frac{8\pm8\sqrt{10}}{2}$ NB denominator must be 2×1 or 2 **and** there must be evidence for correct order of operations in the numerator Allow + instead of ± in the formula			M1	If the first M1 is awarded and an answer of 16.6.... or $4+4\sqrt{10}$ seen award this M mark
				A1	(dep on M1) 16.6….
				B1	(dep on M1) 20.6 - 20.65 ft
					Total 7 marks

17	FDs are 2, 3, 2.8, 0.7, 0.8	Correct histogram	3	M1	for any two correct FD calculations (can be implied by at least two correct bars)
				M1	for any three correct FDs (can be implied by at least three correct bars)
				A1	fully correct histogram
				(SC: B2 for all five bars of correct width with heights in the correct ratio)	
				(SC:B1 for three bars of correct width with heights in the correct ratio)	
					Total 3 marks