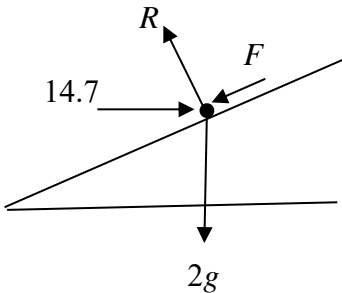
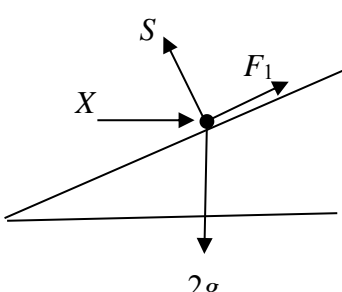


Question Number	Scheme	Marks
3(a)		
	<p>(□), $14.7 \cos \alpha = 2g \sin \alpha + F$ (could be $-F$)</p> <p>OR: (\rightarrow), $14.7 + F \cos \alpha = R \sin \alpha$ AND eliminate R to give an equation in F only. (\uparrow), $R \cos \alpha + F \sin \alpha = 2g$</p> <p><u>Verification methods</u></p> <p>$14.7 \cos \alpha = (11.76) = 2g \sin \alpha$ (i.e. verification that $X = 14.7 \Rightarrow F = 0$)</p> <p>OR: $X \cos \alpha = 2g \sin \alpha \Rightarrow X = 14.7$ (i.e. verification that $F = 0 \Rightarrow X = 14.7$)</p>	M1 A1
	so $F = 0^*$ oe	A1*
		(3)
		
3(b)	$F_1 = 0.5S$	B1
	<p>Two equations taken from:</p> <p>(□), $X \cos \alpha + F_1 = 2g \sin \alpha$</p> <p>(□), $S = X \sin \alpha + 2g \cos \alpha$</p> <p>($\rightarrow$), $X + F_1 \cos \alpha = S \sin \alpha$</p> <p>($\uparrow$), $S \cos \alpha + F_1 \sin \alpha = 2g$</p>	M1A2 M1A2