Title: Pre-U STPM Physics Term 1
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Errata

Page	Section / Part	Error	Correction
25	STPM Practice 1 Qs 4	**A** 12.2 N at 48° below the *x*-axis **B** 12.2 N at 42° above the *x*-axis	**A** 8.3 N at 15° above the *x*-axis **B** 8.3 N at 15° below the *x*-axis
30 - 31	Answer STPM Practice 1 No. 4	4. A : *x*-component, $F_x = 5.0 + 6.0 \sin 30° \text{ N} = 9.0 \text{ N}$ *y*-component, $F_y = -3.0 + 6.0 \cos 30° \text{ N} = 2.2 \text{ N}$ Resultant force, $F = \sqrt{9.0^2 + 2.2^2} \text{ N} = 9.3 \text{ N}$ $\tan^{-1}\left(\frac{2.2}{9.0}\right) = 14°$ above *x*-axis	**A** x-component, $F_x = 5.0 + 6.0 \sin 30° = 8.0 \text{ N}$ y-component, $F_y = -3.0 + 6.0 \cos 30° = 2.2 \text{ N}$ Resultant force, $F = \sqrt{8.0^2 + 2.2^2} = 8.3 \text{ N}$ $\theta = \tan^{-1}\left(\frac{2.2}{8.0}\right) = 15°$
58	Answer STPM Practice 1 No. 10	(c) (i) $H = 2.0 \text{ m} = \frac{u^2 \sin^2\theta}{2g}$ $R = 22.0 \text{ m} = \frac{u^2 \sin 2\theta}{g}$ Solving, $\theta = 10.3°$ and $u = 35 \text{ m s}^{-1}$ (ii) $T = \frac{22.0}{u \cos\theta} = 0.64 \text{ s}$	(i) $H = 2.0 = \frac{u^2 \sin^2\theta}{2g}$ … [1] $R = 22.0 = \frac{u^2 \sin 2\theta}{g} = \frac{2u^2 \sin\theta \cos\theta}{g}$ … [2] $\frac{[1]}{[2]}$: $\tan\theta = \frac{4}{11}, \theta = 20°$ From [1], $u = \frac{2\sqrt{g}}{\sin 20°} = 18.3 \text{ m s}^{-1}$ (ii) $T = \frac{22.0}{u \cos 20°} = 1.28 \text{ s}$
58	Answers STPM Practice 2 No. 12	(a) 140 m s^{-1} at 19° to the horizontal (b) 9.1 s	(a) 203 m s^{-1} at 81.7° to the horizontal (b) 40.9 s

58	Answer STPM Practice 1 No. 14	(b) (i) OA – constant acceleration AB – constant deceleration BC – constant acceleration	OA: Trolley accelerates down the incline AB: A to *t*-axis: As the spring is compressed the trolley decelerates *t*-axis to B: As the spring extends, the trolley accelerates up the incline BC: After the spring is fully extended, the trolley decelerates until $v = 0$.