

1.	k	v
	$v_i = 0$	$a =$
	$t = 7s$	
	$v_f = 23 \frac{m}{s}$	

$$v_f = v_i + at$$

$$23 = 0 + a(7)$$

$$a = 5.71 \frac{m}{s^2}$$

7.	k	v
	$v_i = 0$	$d$
	$a = 2.35$	
	$t = 5$	

$$d_f = d_i + v_i t + \frac{1}{2} a t^2$$

$$= \frac{1}{2} (2.3) 5^2$$

$$d = 28.75 m$$

2.	k	v
	$a = 9 \frac{m}{s^2}$	$t$
	$v_i = 0$	
	$v_f = 60 \frac{m}{s}$	

$$v_f = v_i + at$$

$$60 = 0 + 9t$$

$$t = 6.7s$$

8.	k	v
	$d = 92m$	$v$
	$a = -7 \frac{m}{s^2}$	

$$v_f^2 = v_i^2 + 2ad$$

$$0 = v_i^2 + 2(-7)(92)$$

$$v_i = 35.9 \frac{m}{s}$$

3.	k	v
	$a = 1.6 \frac{m}{s^2}$	$t$

$$v_f = v_i + at$$

$$38.5 = 22.2 + 1.6t$$

$$t = 5.2s$$

9.	k	v
	$v_i = 23.6 \frac{m}{s}$	$a$
	$d = 0.8m$	

$$v_f^2 = v_i^2 + 2ad$$

$$0 = 23.6^2 + 2a(0.8)$$

$$a = -348.1 \frac{m}{s^2} \approx 35.5g$$

4.	k	v
	$v_i = 13 \frac{m}{s}$	$a$
	$v_f = 25 \frac{m}{s}$	$d$
	$t = 6.5s$	

$$v_f = v_i + at$$

$$25 = 13 + a(6)$$

$$a = 2 \frac{m}{s^2}$$

$$d_f = d_i + v_i t + \frac{1}{2} a t^2$$

$$= 0 + 13(6) + \frac{1}{2} (2) 6^2$$

$$d_f = 114m$$

5.	k	v
	$d = 85m$	$a$
	$v_i = 23 \frac{m}{s}$	
	$v_f = 0$	

$$v_f = v_i + at$$

$$v_f^2 = v_i^2 + 2ad$$

$$0 = 23^2 + 2a(85)$$

$$a = -3.1 \frac{m}{s^2}$$

6.	k	v
	$v_i = 0$	$d$
	$v_f = 33 \frac{m}{s}$	
	$a = 3 \frac{m}{s^2}$	

$$v_f^2 = v_i^2 + 2ad$$

$$33^2 = 0 + 2(3)d$$

$$d = 181.5m$$

10.	K	V
		d
	$v_i = 26.4$	
	$a = -4 \frac{m}{s^2}$	
	$t = 0.15$	

$$d = v_i t$$

$$= 26.4 \times 0.15$$

$$d = 26.4 \text{ m}$$

~~$$d = d_i + v_i t + \frac{1}{2} a t^2$$

$$= 0 + 26.4 \times 0.15 + \frac{1}{2} (-4) (0.15)^2$$~~

$$v_f^2 = v_i^2 + 2ad$$

$$0 = 26.4^2 + 2(-4)d$$

$$d = 87.12 \text{ m}$$

$$d_{\text{tot}} = 26.4 + 87.12 \text{ m}$$

$$d = 89.8 \text{ m}$$

11.	K	V
		t
	$d = 1.2 \text{ m}$	
	$v_i = 0$	
	$v_f = 14 \frac{m}{s}$	

$$v_f^2 = v_i^2 + 2ad$$

$$14^2 = 2a(1.2)$$

$$a = 81.7 \frac{m}{s^2}$$

$$v_f = v_i + at$$

$$14 = 0 + 81.7t$$

$$t = 0.17 \text{ s}$$

12.	K	V
		t
	$a = 16 \frac{m}{s^2}$	
	$d = 20 \text{ m}$	
	$t = 2.4 \text{ s}$	
	$v_f = 32 \frac{m}{s}$	

$$d = d_i + v_i t + \frac{1}{2} a t^2$$

$$20 = 0 + v_i (2.4) + \frac{1}{2} (16) (2.4)^2$$

$$v_i = 6.4 \text{ m/s}$$

~~$$d = d_i + v_i t$$

$$v_f = v_i + at$$~~

$$32 = 6.4 + 2.4t$$

$$t = 10.67 \text{ s} - 2.4 \text{ s}$$

$$t = 8.26 \text{ s}$$