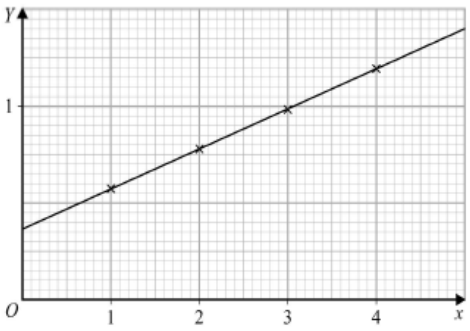
FP1 Linear Laws Answers

6(a)	X values 1.23, 2.18			
	Y values 0.70, 1.48	B3,2,1	3	–1 for each error
(b)	$\lg y = \lg k + \lg x^n$	M1		
	$\lg x^n = n \lg x$	M1		
	So $Y = nX + \lg k$	A1	3	
(c)	Four points plotted	B2,1√		B1 if one error here; ft wrong values in (a)
	Good straight line drawn	B1√	3	ft incorrect points (approx collinear)
(d)	Method for gradient	M1		
	Estimate for n	A1√	2	Allow AWRT 0.75 - 0.78; ft grad of candidate's graph
	Total		**11**	

4(a)	$\lg y = \lg a + b \lg x$	M1A1	2	M1 for use of one log law
(b)	Use of above result	M1		
	$a = 10$	A1		
	b = gradient	m1		OE; PI by answer $\pm\frac{1}{2}$
	$\ldots = -\frac{1}{2}$	A1	4	
	Total		**6**	

5(a)	Values 0.788, 0.992, 1.196 in table	B2,1	2	B1 if one correct (or if wrong number of dp given)
(b)	$\lg\ ab^x = \lg a + \lg b^x$	M1		
	$\lg b^x = x \lg b$	M1		
	So $Y = (\lg b)\, x + \lg a$	A1	3	Allow NMS
(c)				
		B1F		Four points plotted; ft wrong values in (a)
		B1F	2	Good straight line drawn; ft incorrect points
(d)	a = antilog of y-intercept	M1A1		Accept 2.23 to 2.52
	b = antilog of gradient	M1A1	4	Accept 1.58 to 1.62
	Total		**11**	
