

Find the mid-point, distance and gradient between two points.

A	(-4 , 3)		Mid-point	Distance	Gradient
B	(2 , -5)	AB	(,)		
C	(6 , 1)	BC	(,)		
D	(-7 , -1)	CD	(,)		
E	(9 , 6)	DE	(,)		
F	(8 , -1)	EF	(,)		
G	(-7 , 10)	FG	(,)		
H	(-3 , -9)	GH	(,)		
I	(12 , -3)	HI	(,)		
J	(-2 , 8)	IJ	(,)		
K	(4 , -4)	JK	(,)		
L	(0 , 9)	KL	(,)		
M	(7 , -12)	LM	(,)		
N	(4 , -10)	MN	(,)		
O	(-4 , 6)	NO	(,)		
P	(10 , -8)	OP	(,)		
Q	(12 , -2)	PQ	(,)		
R	(5 , 5)	QR	(,)		
S	(-6 , 7)	RS	(,)		
T	(1 , 11)	ST	(,)		
U	(-11 , 4)	TU	(,)		
V	(-8 , 0)	UV	(,)		
W	(-9 , -5)	VW	(,)		
X	(5 , 2)	WX	(,)		
Y	(-12 , -6)	XY	(,)		
Z	(3 , -10)	YZ	(,)		
A	(-4 , 3)	ZA	(,)		

Solutions					
			Mid-point	Distance	Gradient
A	(-4 , 3)	AB	(-1 , -1)	10.00000	-1.33333
B	(2 , -5)	BC	(4 , -2)	7.21110	1.50000
C	(6 , 1)	CD	(-0.5 , 0)	13.15295	0.15385
D	(-7 , -1)	DE	(1 , 2.5)	17.46425	0.43750
E	(9 , 6)	EF	(8.5 , 2.5)	7.07107	7.00000
F	(8 , -1)	FG	(0.5 , 4.5)	18.60108	-0.73333
G	(-7 , 10)	GH	(-5 , 0.5)	19.41649	-4.75000
H	(-3 , -9)	HI	(4.5 , -6)	16.15549	0.40000
I	(12 , -3)	IJ	(5 , 2.5)	17.80449	-0.78571
J	(-2 , 8)	JK	(1 , 2)	13.41641	-2.00000
K	(4 , -4)	KL	(2 , 2.5)	13.60147	-3.25000
L	(0 , 9)	LM	(3.5 , -1.5)	22.13594	-3.00000
M	(7 , -12)	MN	(5.5 , -11)	3.60555	-0.66667
N	(4 , -10)	NO	(0 , -2)	17.88854	-2.00000
O	(-4 , 6)	OP	(3 , -1)	19.79899	-1.00000
P	(10 , -8)	PQ	(11 , -5)	6.32456	3.00000
Q	(12 , -2)	QR	(8.5 , 1.5)	9.89949	-1.00000
R	(5 , 5)	RS	(-0.5 , 6)	11.18034	-0.18182
S	(-6 , 7)	ST	(-2.5 , 9)	8.06226	0.57143
T	(1 , 11)	TU	(-5 , 7.5)	13.89244	0.58333
U	(-11 , 4)	UV	(-9.5 , 2)	5.00000	-1.33333
V	(-8 , 0)	VW	(-8.5 , -2.5)	5.09902	5.00000
W	(-9 , -5)	WX	(-2 , -1.5)	15.65248	0.50000
X	(5 , 2)	XY	(-3.5 , -2)	18.78829	0.47059
Y	(-12 , -6)	YZ	(-4.5 , -8)	15.52417	-0.26667
Z	(3 , -10)	ZA	(-0.5 , -3.5)	14.76482	-1.85714
A	(-4 , 3)				

Teacher notes

Introduction

The task sheet has sufficient space for answers but any working out should be done on mini whiteboards.

This activity works well in Rally Coach pairs. The first student completes the first problem with the 2nd student acting as a coach. They then swap over.

Extension

Identify which line segments are parallel and which are perpendicular.