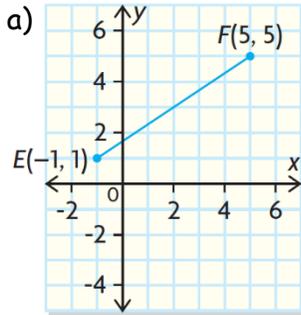


## Midpoint and Distance

1. Determine the midpoint of each line.

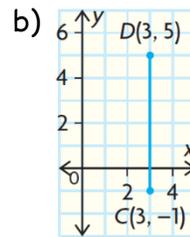
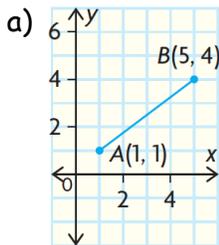


b)  $A(-1,3)$  to  $B(5,7)$

c)  $J(-2,3)$  to  $K(3,4)$

2. Given that  $P(-3,-1)$  is one endpoint of  $PQ$ .  $M(1,1)$  is the midpoint of  $PQ$ . Determine the coordinates of endpoint  $Q$ .

3. Determine the length of each line segment.



4. A helicopter travelled from Kapuskasing to North Bay. On a map of Ontario, with the origin at Windsor and the coordinates in kilometres, Kapuskasing is at  $K(70,770)$  and North Bay is at  $N(220,490)$ . Approximately how far did the helicopter travel?

5. A coordinate system is superimposed on a pool table. Gord has a yellow ball at  $A(2,3)$ . He is going to "bank" it off the side rail located at  $B(6,5)$ , after which it will travel into the pocket at  $C(2,7)$ . How far will the yellow ball travel?

6. Farmer Huber has a triangular field with corners  $A(-1,1)$ ,  $B(1,5)$ , and  $C(5,1)$ . There are gates at  $M$  and  $N$ , the midpoints of  $AB$  and  $BC$  respectively. A straight path goes from  $M$  to  $N$ . Show that the path is half as long as the fenceline  $AC$ .

