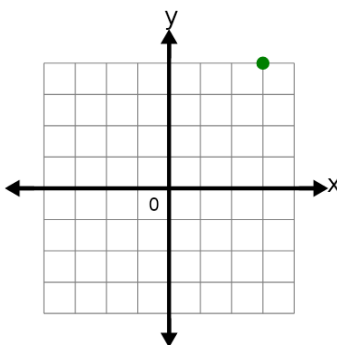


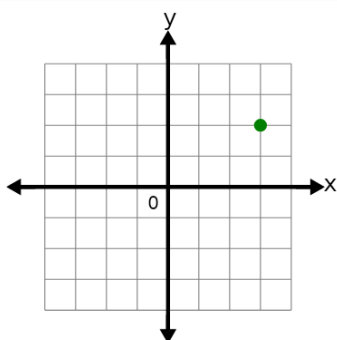


Cartesian Grid Transformations - Intro

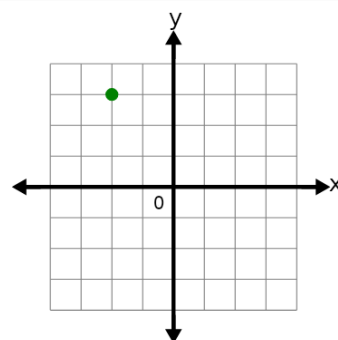
1 Translate this point by down 2



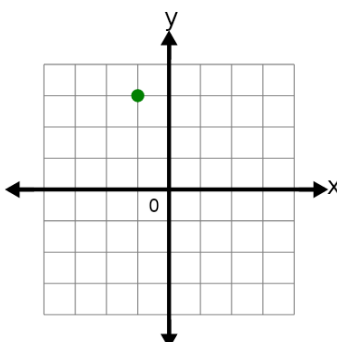
A



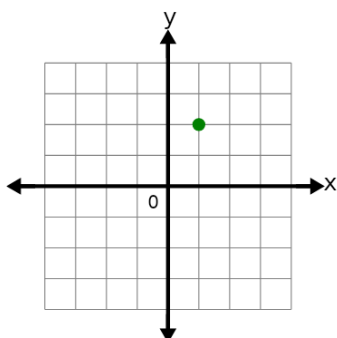
B



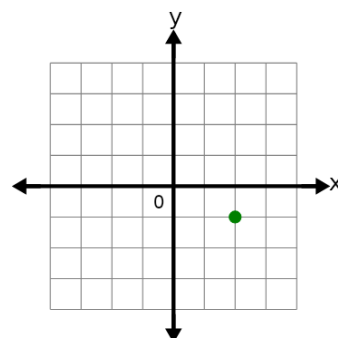
2 Translate this point by right 2, down 1



A



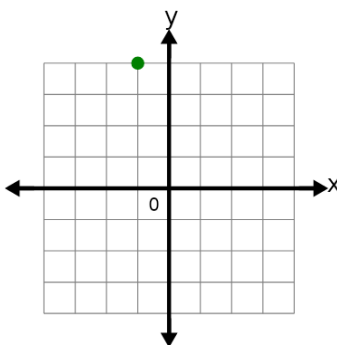
B



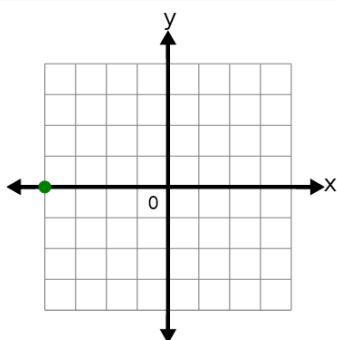


Cartesian Grid Transformations - Intro

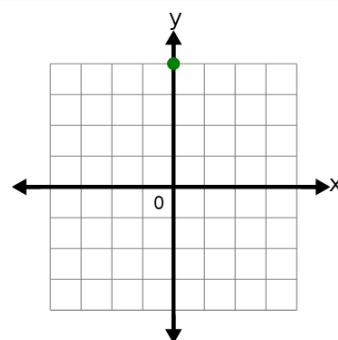
3 Translate this point by $(1,0)$



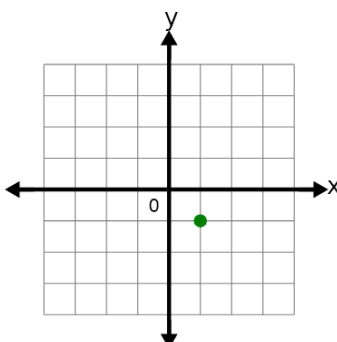
A



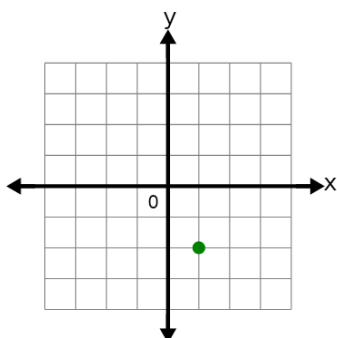
B



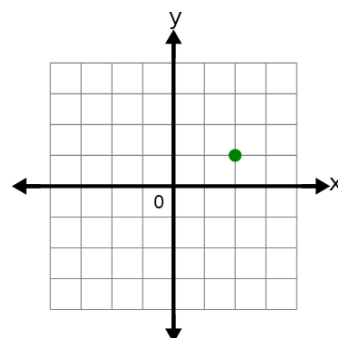
4 Translate this point by $(1,2)$



A



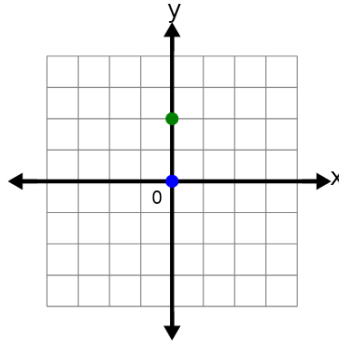
B



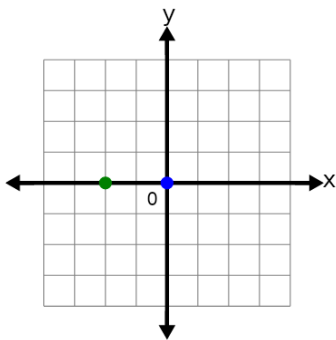


Cartesian Grid Transformations - Intro

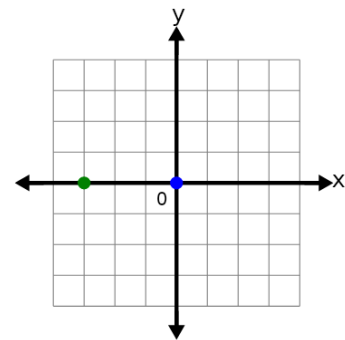
5 Rotate this point by 90° counter-clockwise about the origin



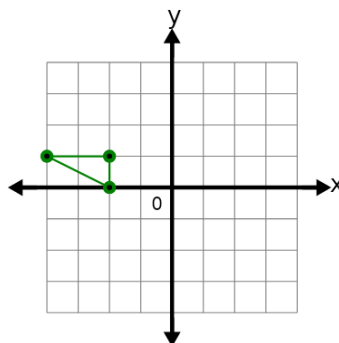
A



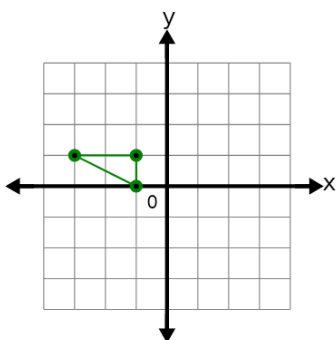
B



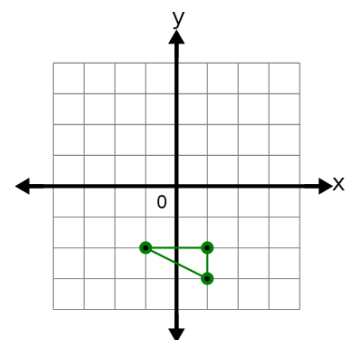
6 Translate this shape by right 1



A



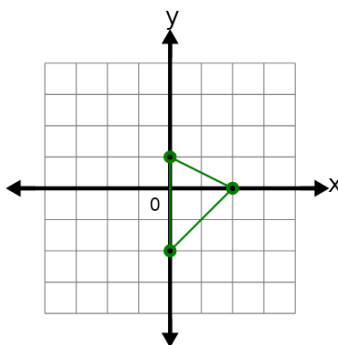
B



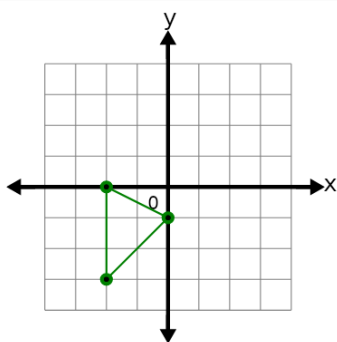


Cartesian Grid Transformations - Intro

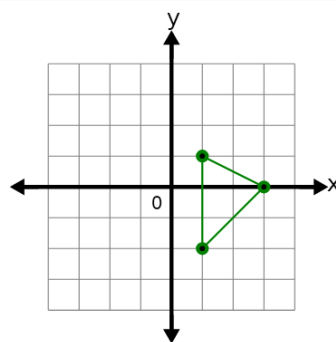
7 Translate this shape by right 1



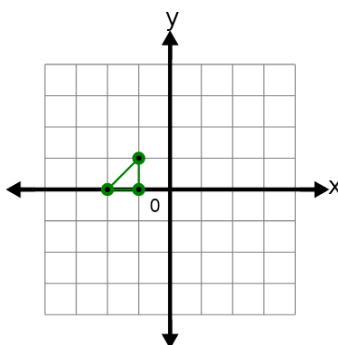
A



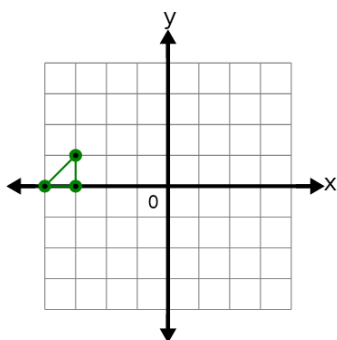
B



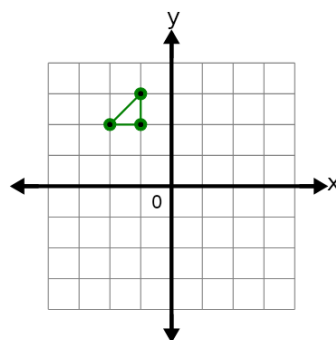
8 Translate this shape by $(-2, 0)$



A



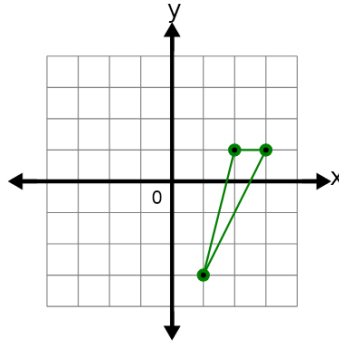
B



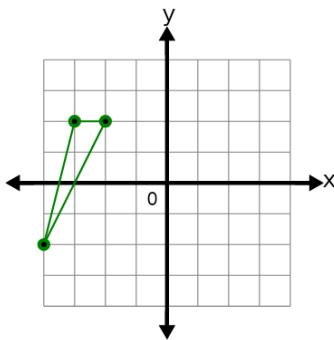


Cartesian Grid Transformations - Intro

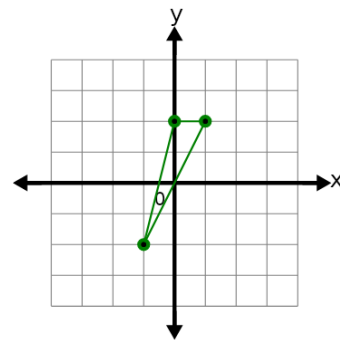
9 Translate this shape by $(-2,1)$



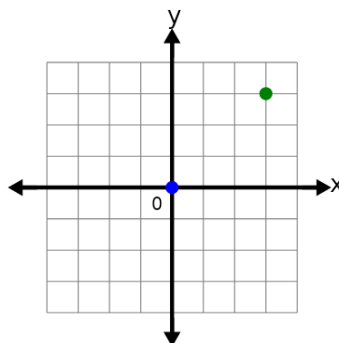
A



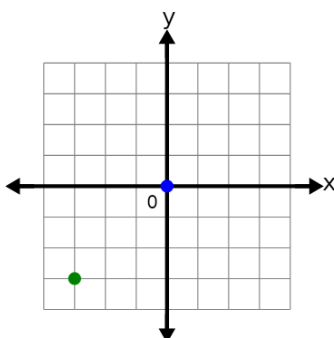
B



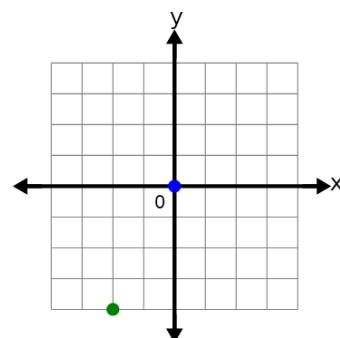
10 Rotate this point by 180° clockwise about the origin



A



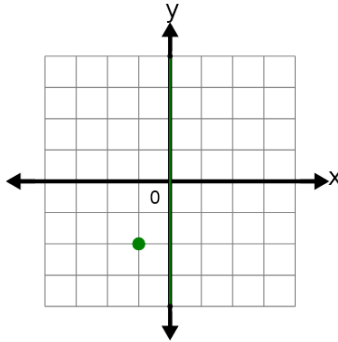
B



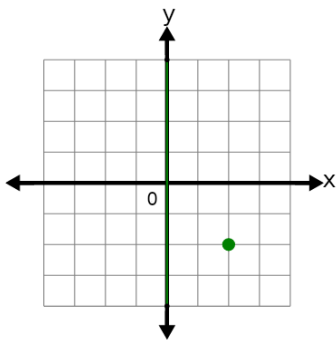


Cartesian Grid Transformations - Intro

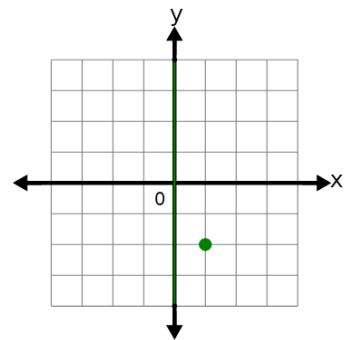
11 Reflect this point across the Y axis



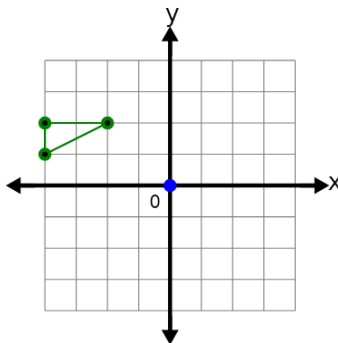
A



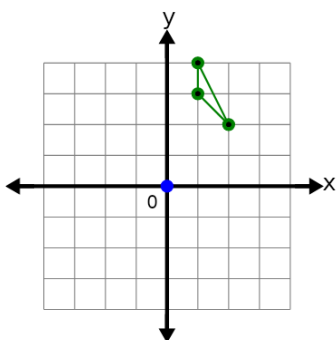
B



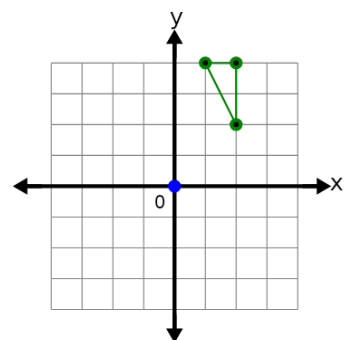
12 Rotate this shape by 90° clockwise about the origin



A



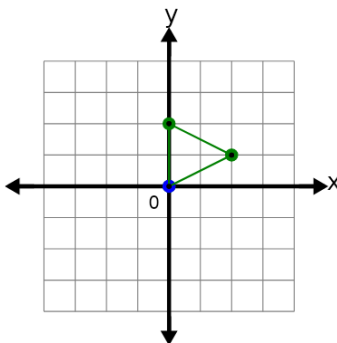
B



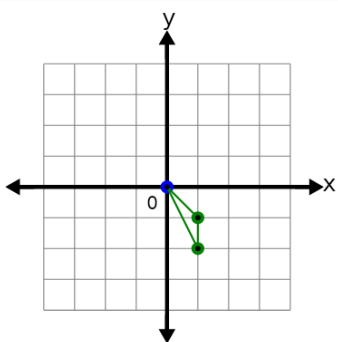


Cartesian Grid Transformations - Intro

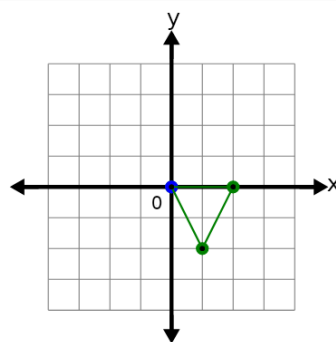
13 Rotate this shape by 90° clockwise about the origin



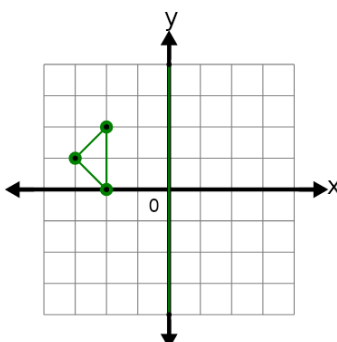
A



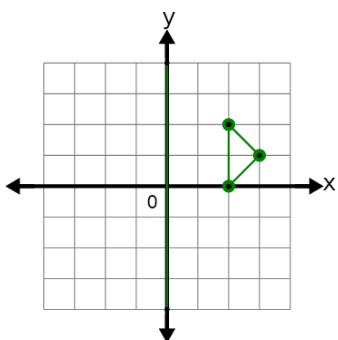
B



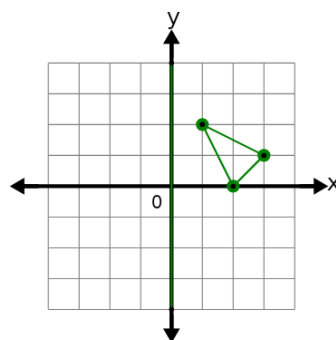
14 Reflect this shape across the Y axis



A



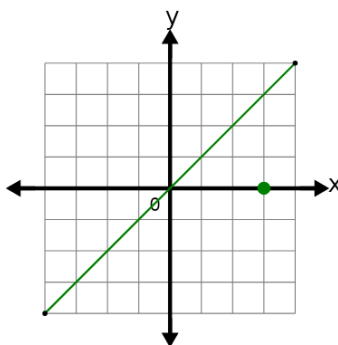
B



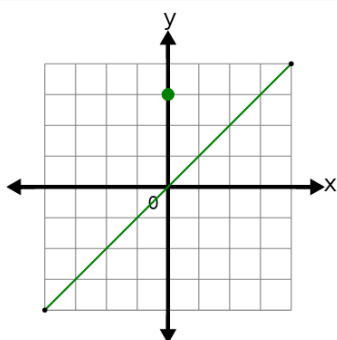


Cartesian Grid Transformations - Intro

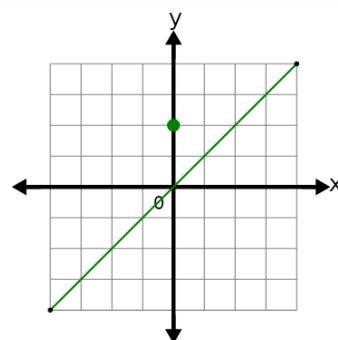
15 Reflect this point across the diagonal



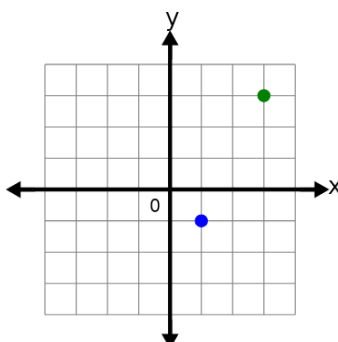
A



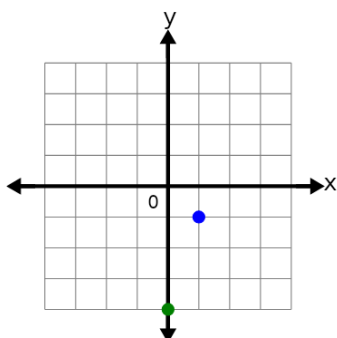
B



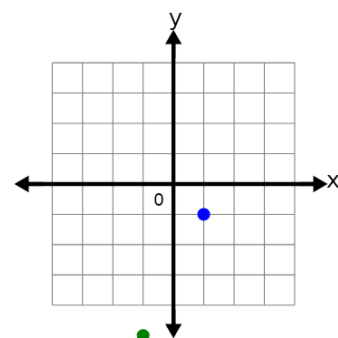
16 Rotate this point by 180° counter-clockwise about point (1,-1)



A



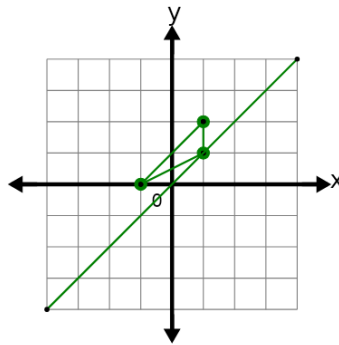
B



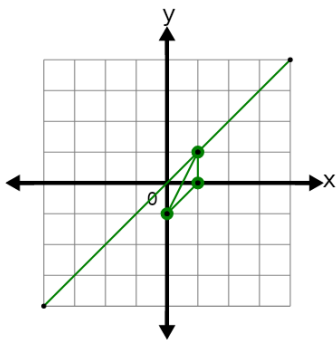


Cartesian Grid Transformations - Intro

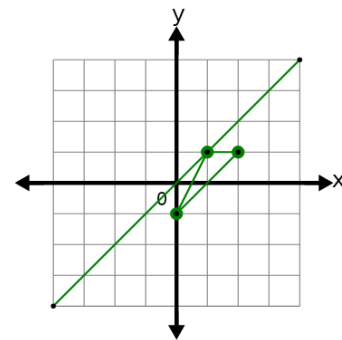
17 Reflect this shape across the diagonal



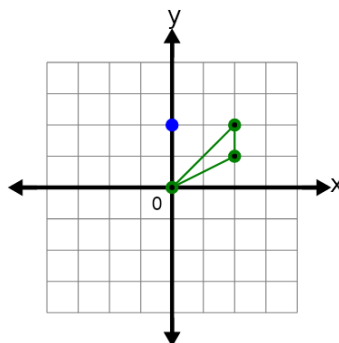
A



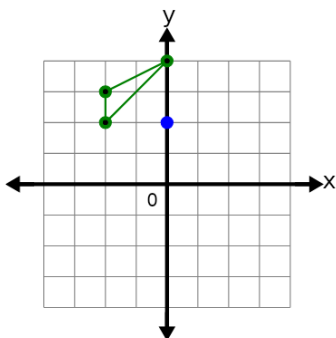
B



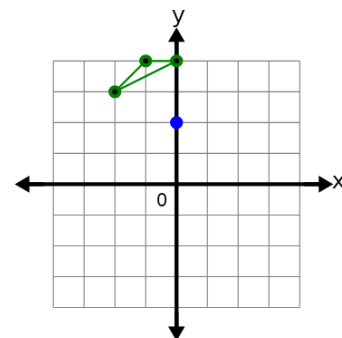
18 Rotate this shape by 180° counter-clockwise about point (0,2)



A



B





Cartesian Grid Transformations - Intro

19 What quadrant is this angle in?

225°

A

IV

B

I

C

III

D

II

20 Which angle would be in this quadrant?

I

A

45°

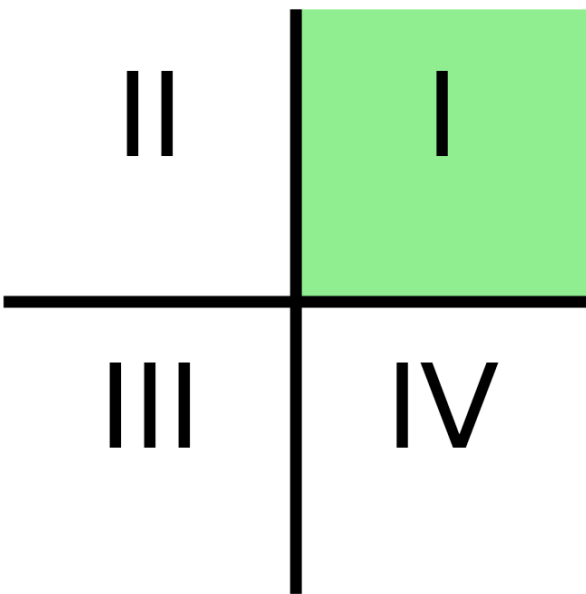
B

330°

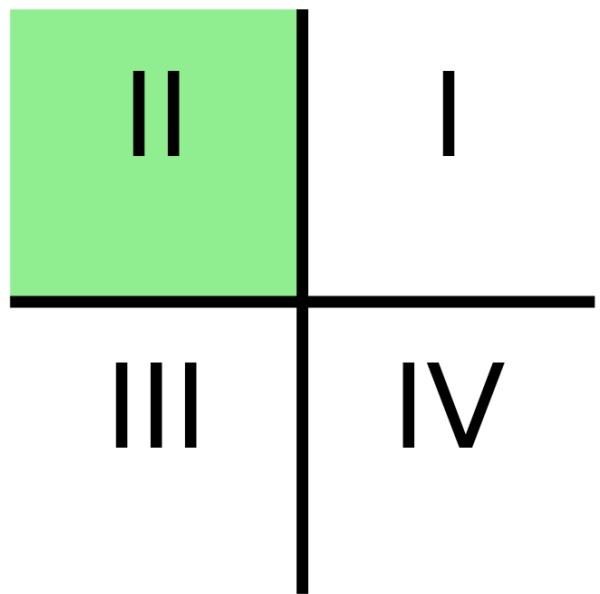
21 Which image shows the quadrant that this angle is in?

120°

A



B



22 Translate point (0,3) by up 1

(0,3)

A

(0,4)

B

(0,-4)

23 Translate point (1,-3) by left 2, up 2

(1,-3)

A

(1,-1)

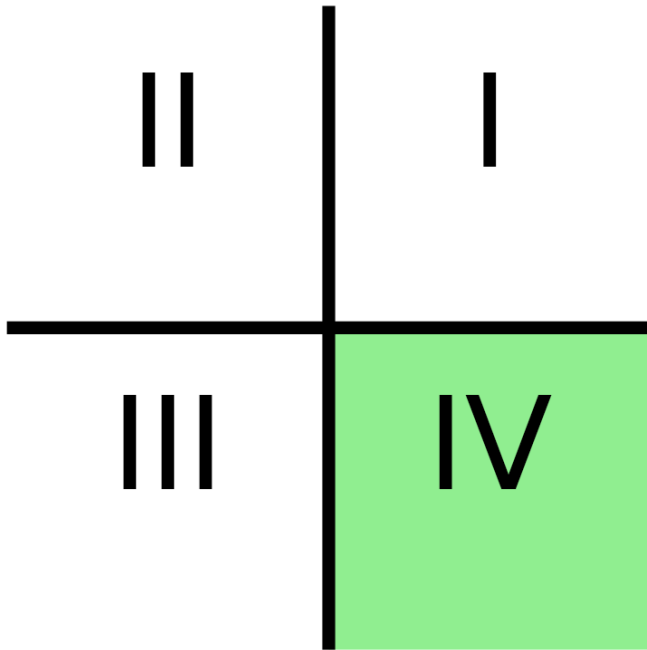
B

(-1,-1)



Cartesian Grid Transformations - Intro

24 Which angle would be in this quadrant?



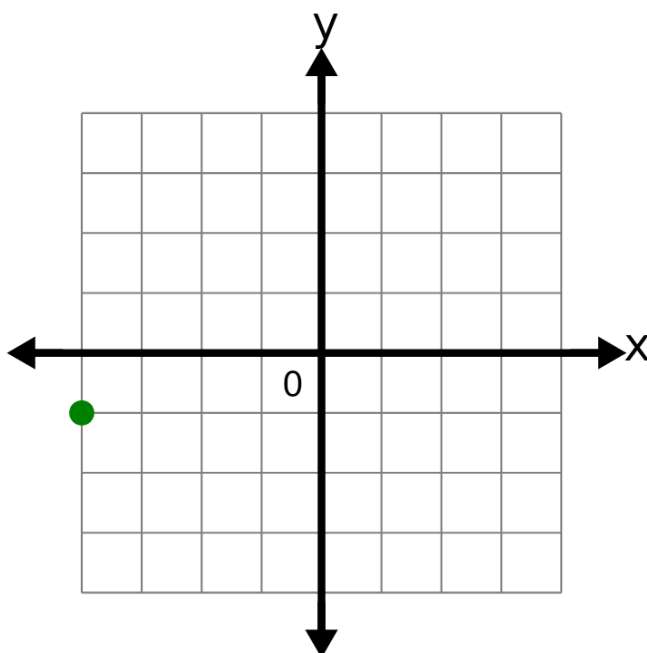
A

315°

B

45°

25 Translate this point by up 1



A

$(-0,4)$

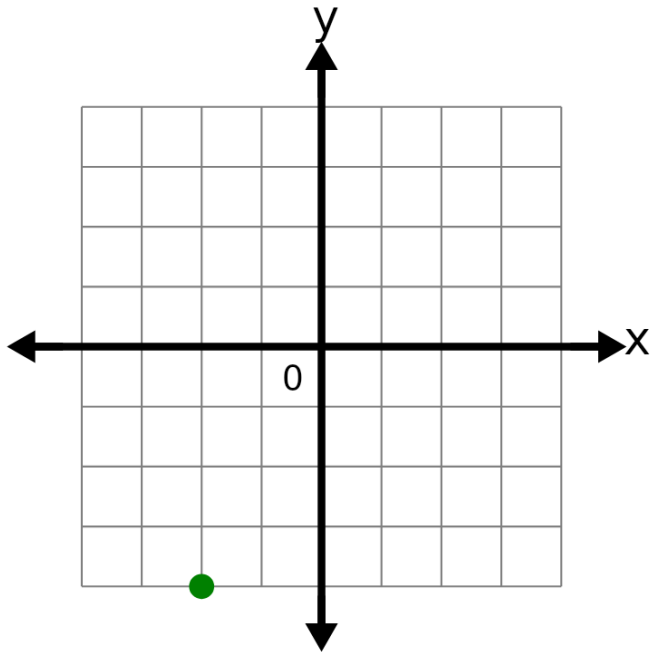
B

$(-4,0)$



Cartesian Grid Transformations - Intro

26 Translate this point by left 2, up 1



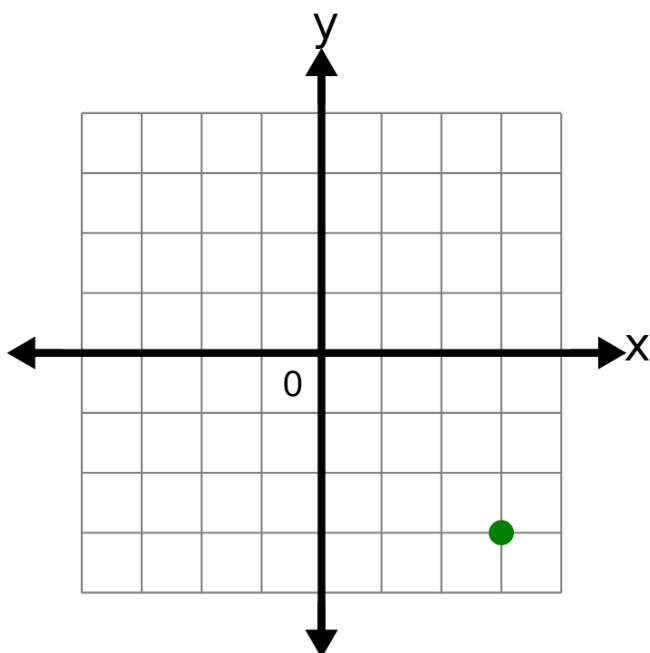
A

$(-3, -4)$

B

$(-4, -3)$

27 Translate this point by $(-2, 0)$



A

$(1, -3)$

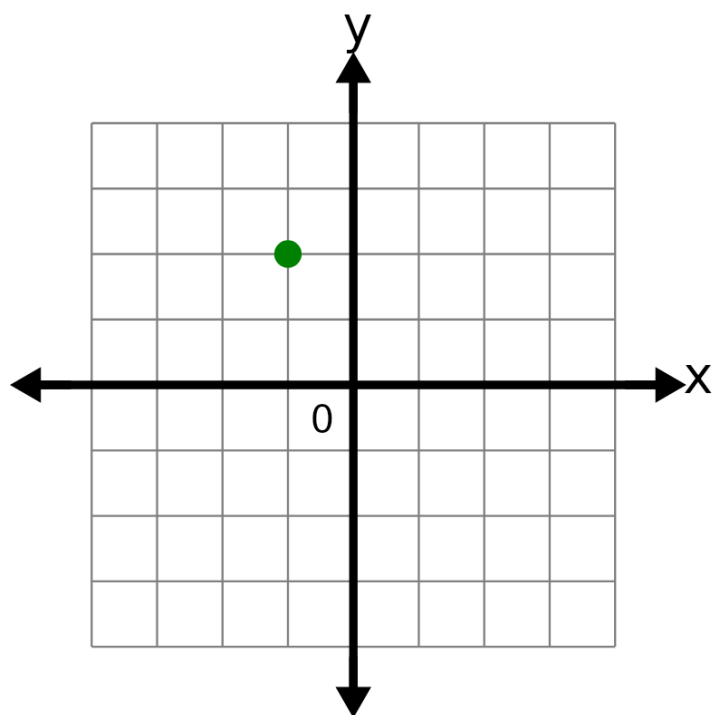
B

$(3, 1)$



Cartesian Grid Transformations - Intro

28 Translate this point by $(1, -2)$



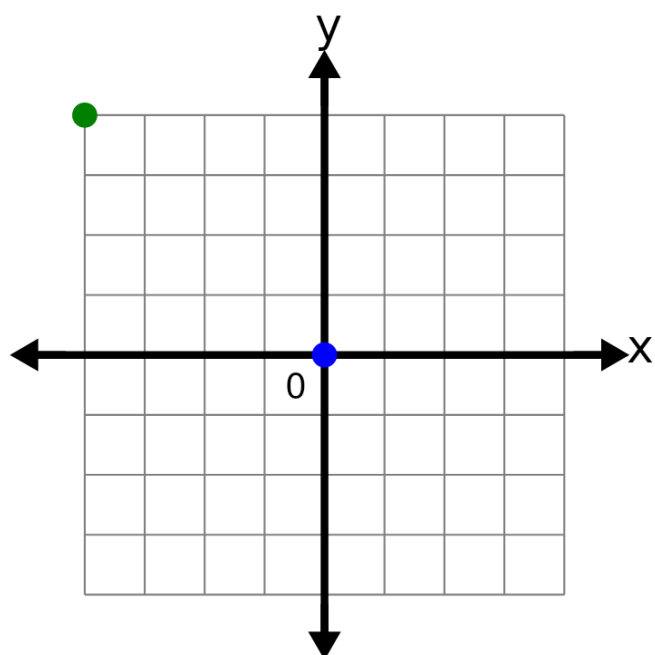
A

$(0, 0)$

B

$(1, 1)$

29 Rotate this point by 180° clockwise about the origin



A

$(4, -4)$

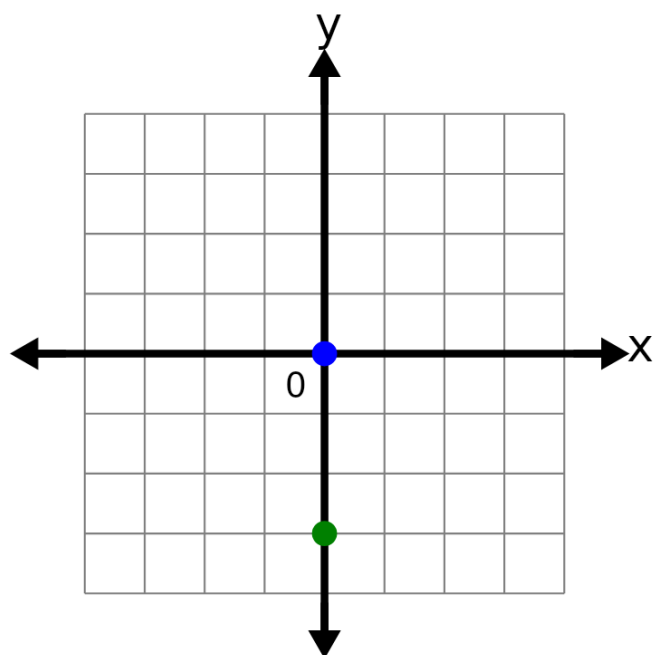
B

$(-4, -4)$



Cartesian Grid Transformations - Intro

30 Rotate this point by 90° clockwise about the origin



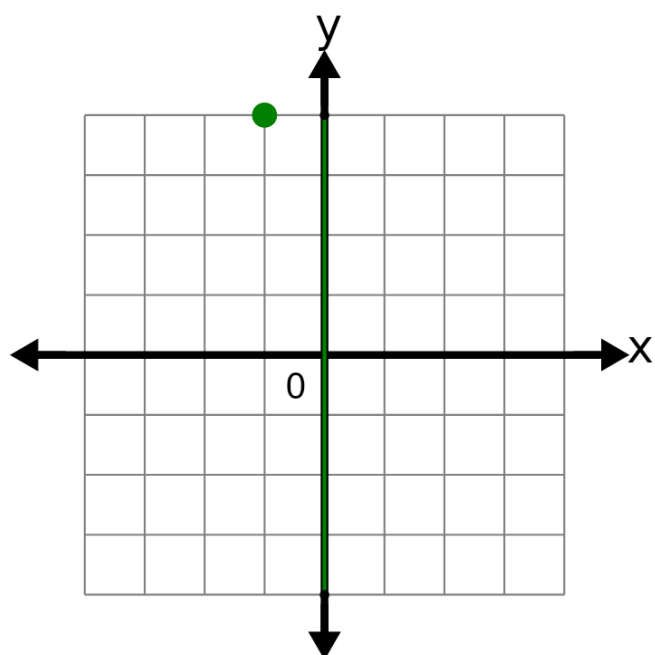
A

$(-3, 0)$

B

$(0, 3)$

31 Reflect this point across the Y axis



A

$(1, 4)$

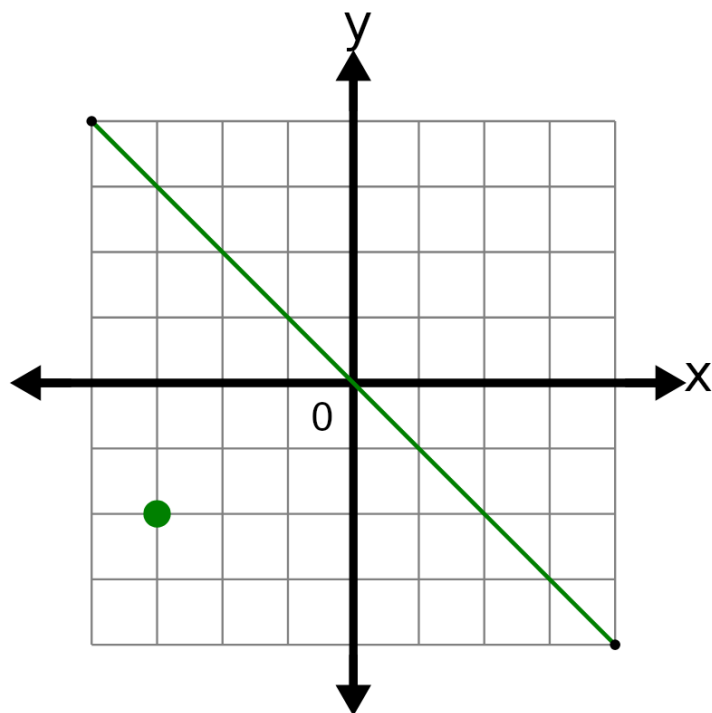
B

$(-4, -1)$



Cartesian Grid Transformations - Intro

32 Reflect this point across the diagonal



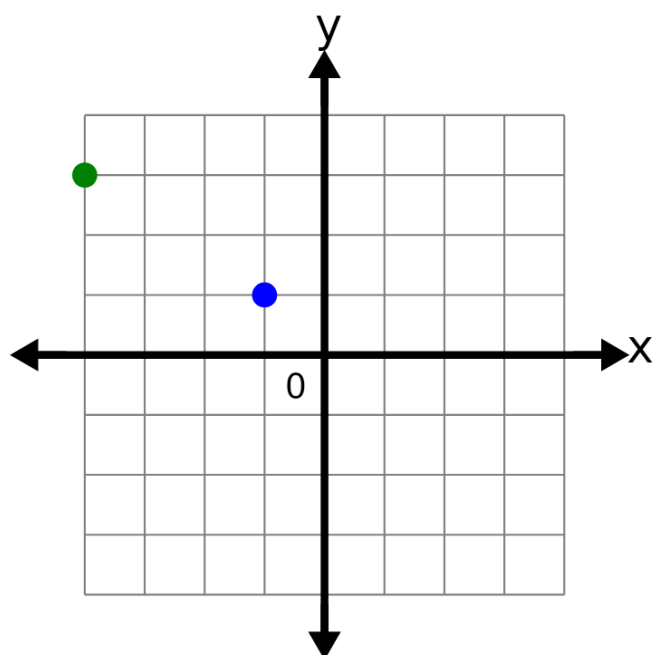
A

(2,3)

B

(3,2)

33 Rotate this point by 90° clockwise about point $(-1,1)$



A

(-1,4)

B

(1,4)



Cartesian Grid Transformations - Intro

34 Rotate point (4,3) by 90° counter-clockwise about the origin

(4,3)

A

(-3,4)

B

(3,4)

35 Reflect point (-4,-4) across the Y axis

(-4,-4)

A

(-4,-4)

B

(4,-4)

36 Rotate point (0,3) by 180° clockwise about point (1,0)

(0,3)

A

(-3,-2)

B

(2,-3)

37 Translate point (3,-3) by (0,-1)

(3,-3)

A

(3,-4)

B

(4,3)

38 Reflect point (1,1) across the diagonal

(1,1)

A

(-1,1)

B

(-1,-1)

39 Translate point (2,-1) by (-2,1)

(2,-1)

A

(0,0)

B

(1,-3)

40 Rotate point (0,-4) by 180° counter-clockwise about point (0,-1)

(0,-4)

A

(0,2)

B

(2,0)