

	A	B	C	D	E	F
=						
1	radius		6 point	a		
2	θ		60			

Point a

this point has radius = 6

the angle that is formed with the positive x

axis is in degrees 60° or in radians $\frac{\pi}{3}$

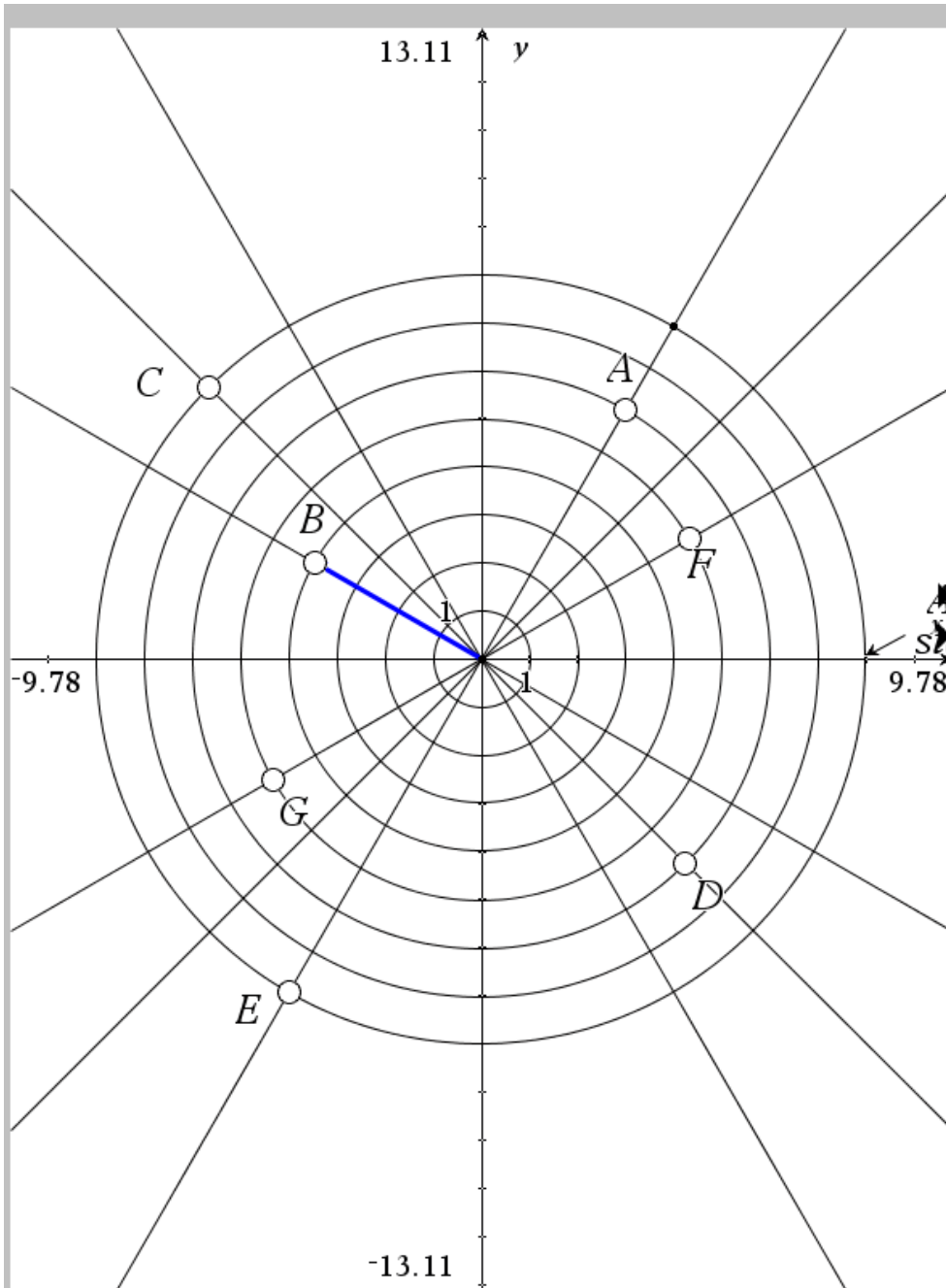
Polar coordinates $(6, 60^\circ)$ or $(6, \frac{\pi}{3})$

Rectangular coordinates

$(6 \cos(60), 6 \sin(60))$ or $(6 \cos(\frac{\pi}{3}), 6 \sin(\frac{\pi}{3}))$

$(6 \cdot \frac{1}{2}, 6 \cdot \frac{\sqrt{3}}{2})$ or $(3, 3\sqrt{3})$

$\approx (3, 5.19615)$



	A	B	C	D	E	F
=						
1	radius		4 point	b		
2	θ		150			

D1 point:=b

Point b

this point has radius =4

the angle that is formed with the positive x axis is in

degrees 150° or in radians $\frac{5 \cdot \pi}{6}$

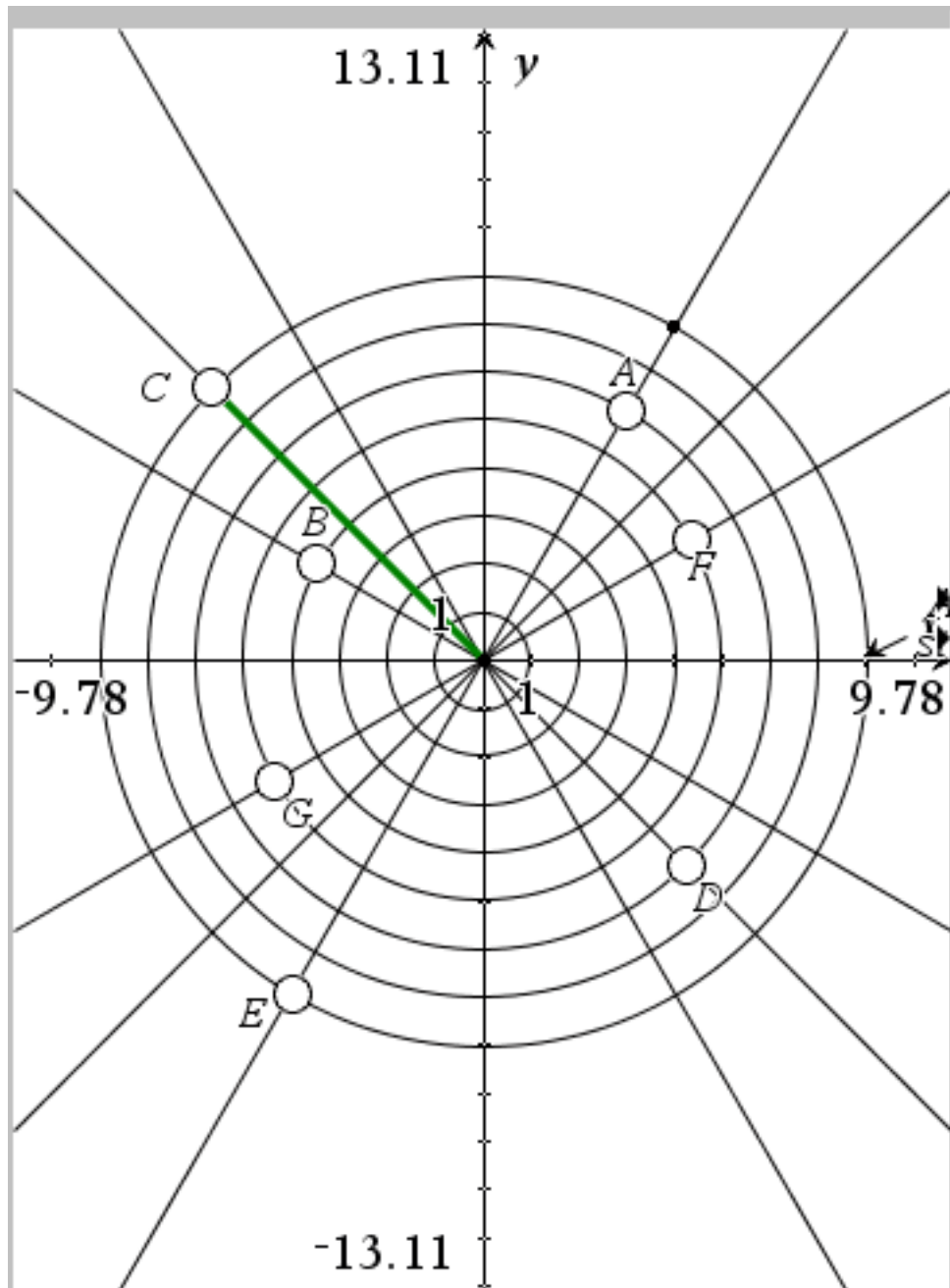
Polar coordinates $(4, 150^\circ)$ or $(4, \frac{5 \cdot \pi}{6})$

Rectangular coordinates

$(4 \cos(150), 4 \sin(150))$ or $(4 \cos(\frac{5 \cdot \pi}{6}), 4 \sin(\frac{5 \cdot \pi}{6}))$

$(4 \cdot \frac{-\sqrt{3}}{2}, 4 \cdot \frac{1}{2})$ or $(-2 \cdot \sqrt{3}, 2)$

$\approx (-3.4641, 2.)$



	A	B	C	D
=				
1	radius		8 point	c
1				

Point c this point has radius = 8

the angle that is formed with the positive x axis is

in degrees 135° or in radians $\frac{3 \cdot \pi}{4}$

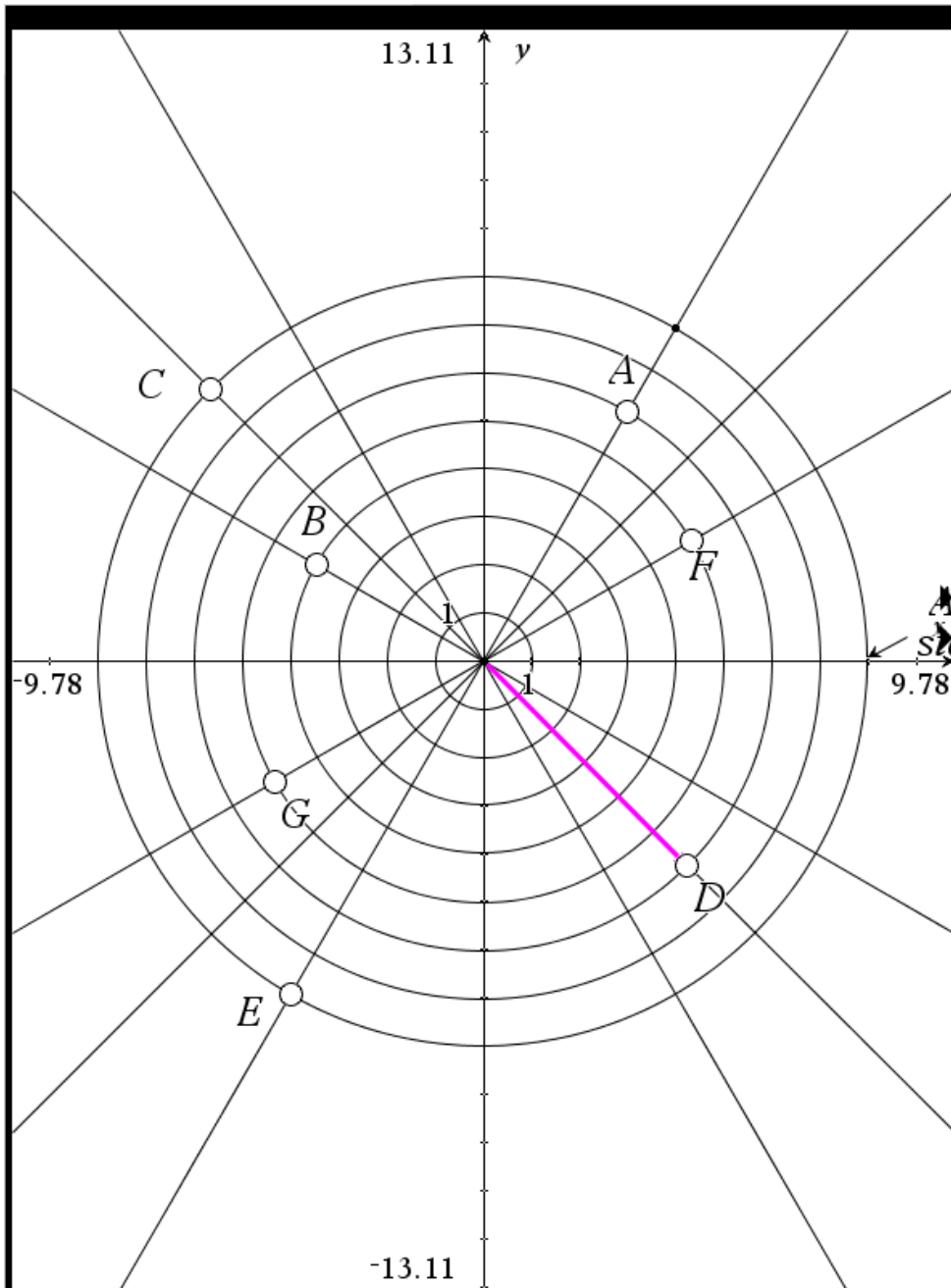
Polar coordinates $(8, 135^\circ)$ or $(8, \frac{3 \cdot \pi}{4})$

Rectangular coordinates

$(8 \cos(135), 8 \sin(135))$ or $(8 \cos(\frac{3 \cdot \pi}{4}), 8 \sin(\frac{3 \cdot \pi}{4}))$

$(8 \cdot \frac{-\sqrt{2}}{2}, 8 \cdot \frac{\sqrt{2}}{2})$ or $(-4 \cdot \sqrt{2}, 4 \cdot \sqrt{2})$

$\approx (-5.65685, 5.65685)$



	A	B	C	D	E	F
=						
1	radius	6	point	d		
2	θ	315				

Point d

this point has radius = 6

the angle that is formed with the positive x axis is in

degrees 315° or in radians $\frac{7 \cdot \pi}{4}$

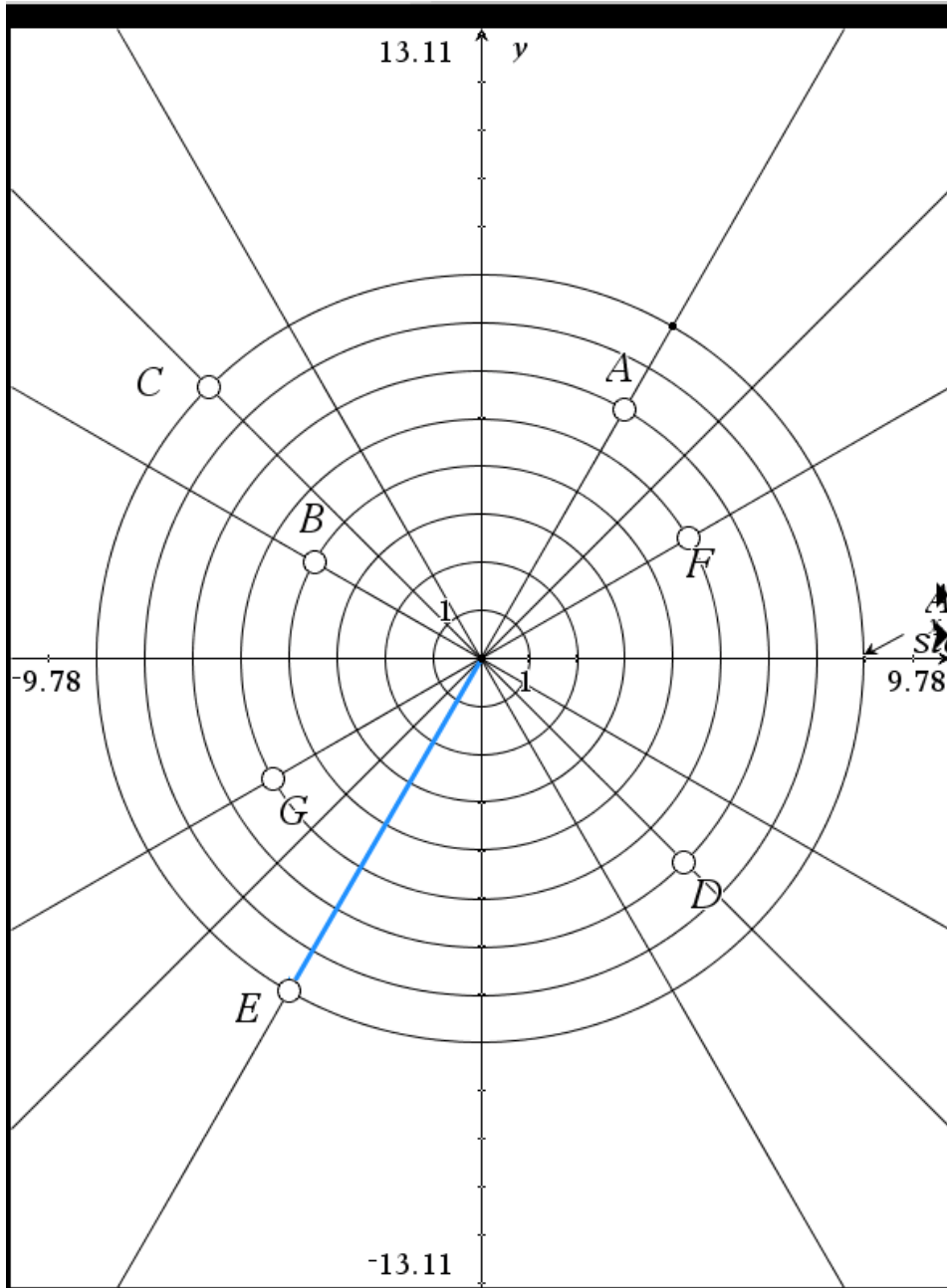
Polar coordinates $(6, 315^\circ)$ or $(6, \frac{7 \cdot \pi}{4})$

Rectangular coordinates

$(6 \cos(315), 6 \sin(315))$ or $(6 \cos(\frac{7 \cdot \pi}{4}), 6 \sin(\frac{7 \cdot \pi}{4}))$

$(6 \cdot \frac{\sqrt{2}}{2}, 6 \cdot \frac{-\sqrt{2}}{2})$ or $(3 \cdot \sqrt{2}, -3 \cdot \sqrt{2})$

$\approx (4.24264, -4.24264)$



	A	B	C	D	E	F
=						
1	radius		8	point	e	
2	θ		240			

Point *e*

this point has radius = 8

the angle that is formed with the positive x axis is in

degrees 240° or in radians $\frac{4 \cdot \pi}{3}$

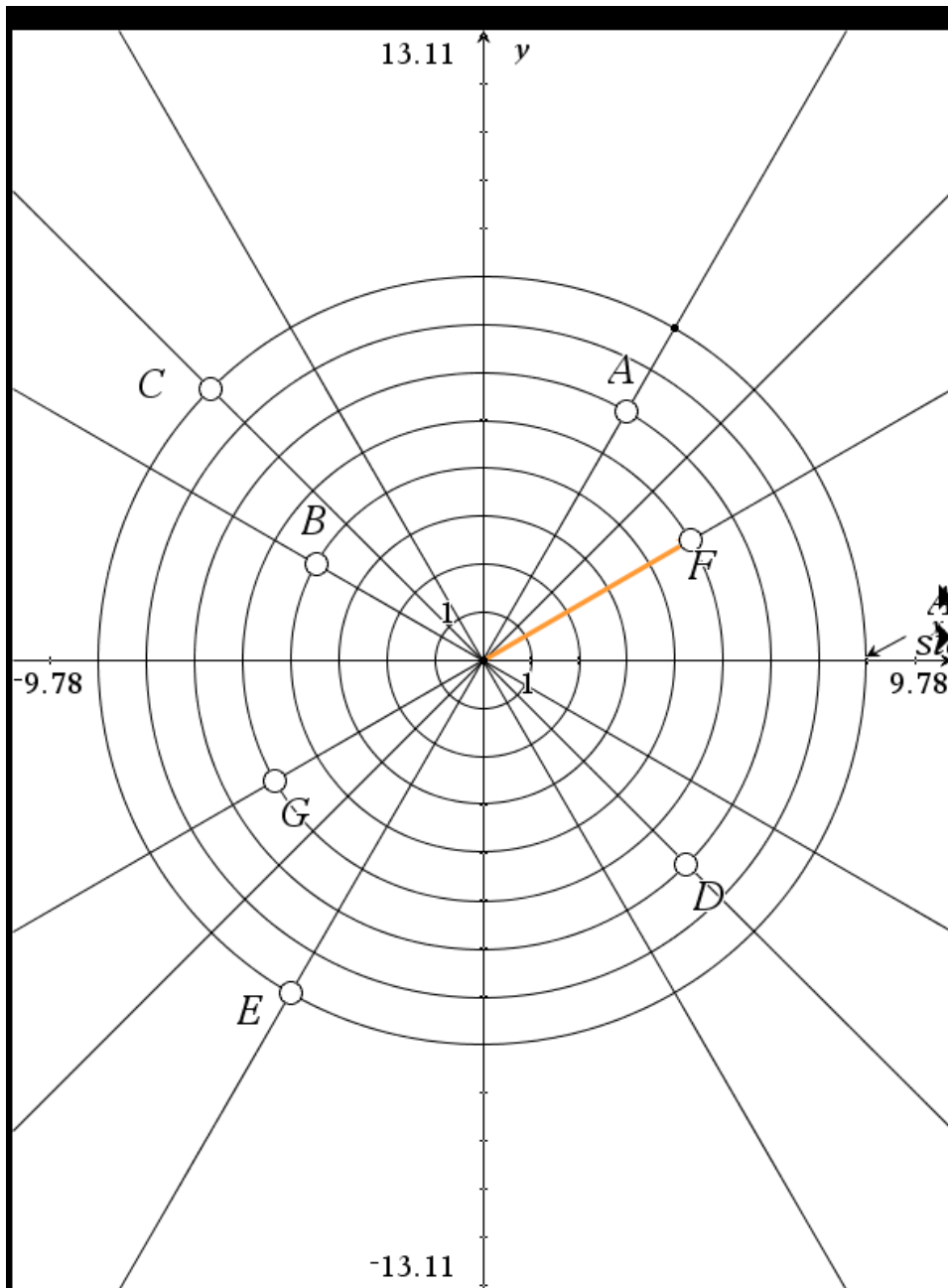
Polar coordinates $(8, 240^\circ)$ or $(8, \frac{4 \cdot \pi}{3})$

Rectangular coordinates

$(8 \cos(240), 8 \sin(240))$ or $(8 \cos(\frac{4 \cdot \pi}{3}), 8 \sin(\frac{4 \cdot \pi}{3}))$

$(8 \cdot \frac{-1}{2}, 8 \cdot \frac{-\sqrt{3}}{2})$ or $(-4, -4 \cdot \sqrt{3})$

$\approx (-4, -6.9282)$



	A	B	C	D	E	F
=						
1	radius	5	point	f		
2	θ	30				

B1 5

Point *f*

this point has radius =5

the angle that is formed with the positive x axis is in

degrees 30° or in radians $\frac{\pi}{6}$

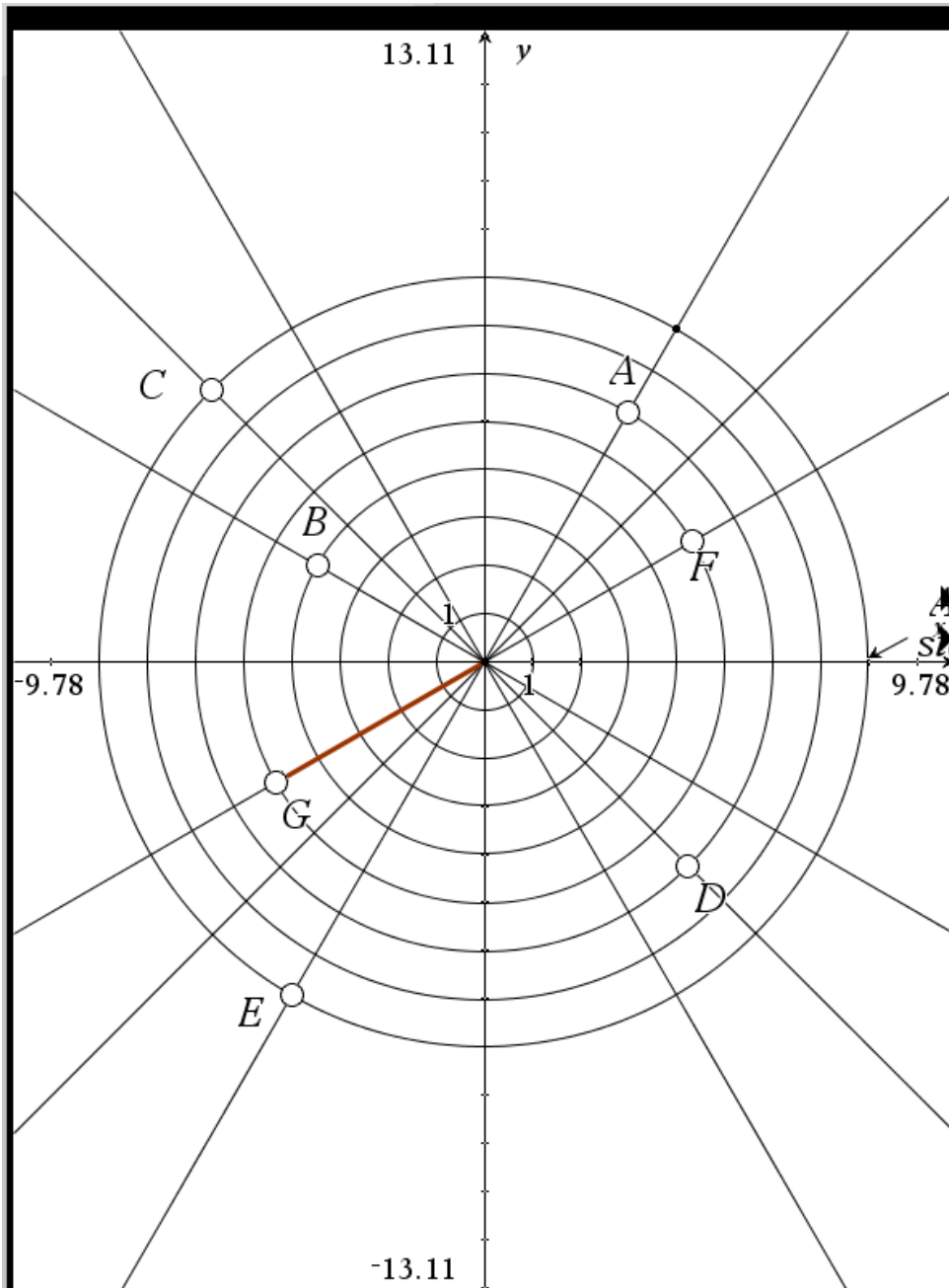
Polar coordinates $(5, 30^\circ)$ or $(5, \frac{\pi}{6})$

Rectangular coordinates

$(5 \cos(30), 5 \sin(30))$ or $(5 \cos(\frac{\pi}{6}), 5 \sin(\frac{\pi}{6}))$

$(5 \cdot \frac{\sqrt{3}}{2}, 5 \cdot \frac{1}{2})$ or $(\frac{5 \cdot \sqrt{3}}{2}, \frac{5}{2})$

$\approx (4.33013, 2.5)$



	A	B	C	D	E	F
=						
1	radius		5 point	g		
2	θ		210			

Point g

this point has radius =5

the angle that is formed with the positive x axis is in

degrees 210° or in radians $\frac{7 \cdot \pi}{6}$

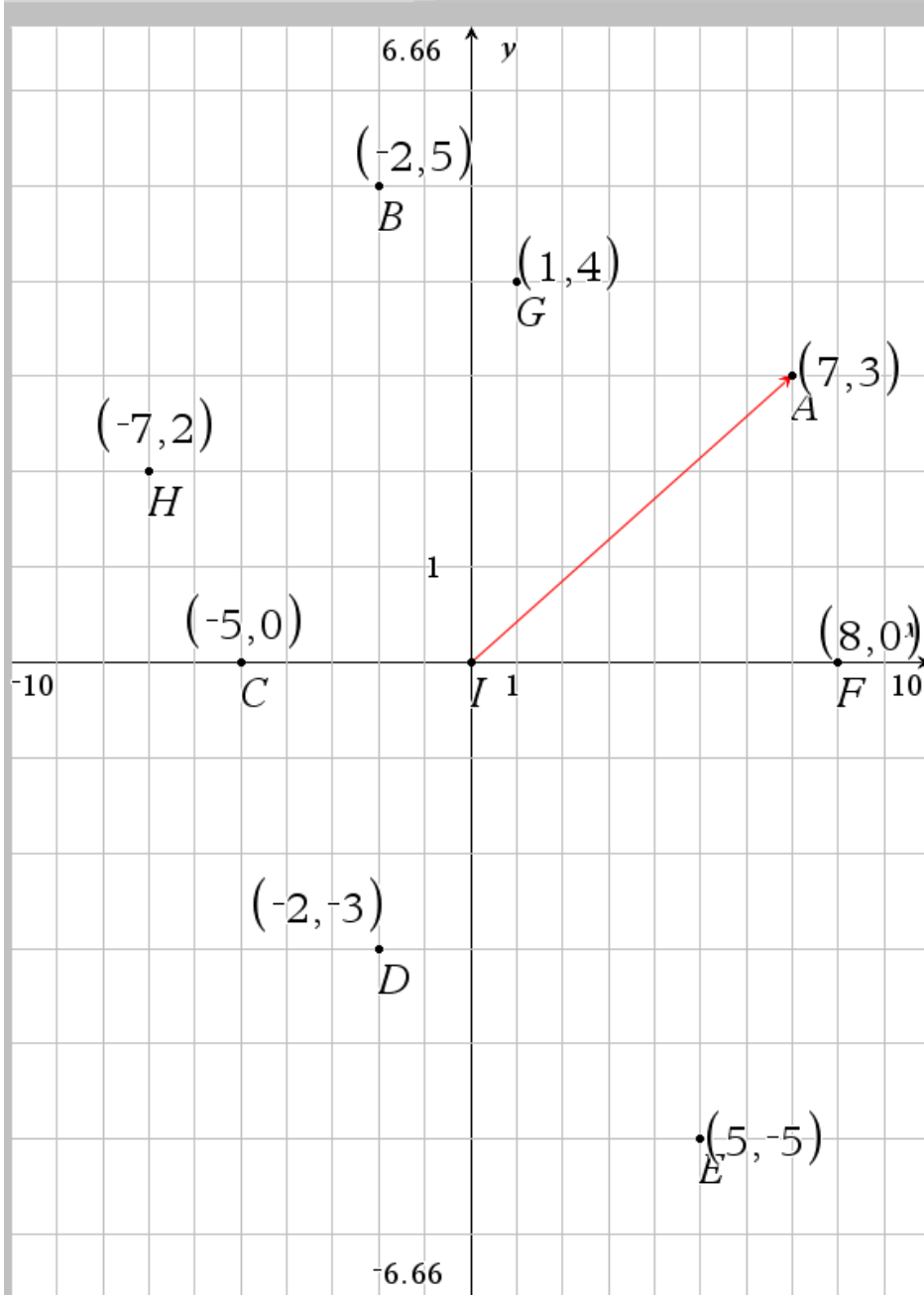
Polar coordinates $(5, 210^\circ)$ or $(5, \frac{7 \cdot \pi}{6})$

Rectangular coordinates

$(5 \cos(210), 5 \sin(210))$ or $(5 \cos(\frac{7 \cdot \pi}{6}), 5 \sin(\frac{7 \cdot \pi}{6}))$

$(5 \cdot \frac{-\sqrt{3}}{2}, 5 \cdot \frac{-1}{2})$ or $(\frac{-5 \cdot \sqrt{3}}{2}, \frac{-5}{2})$

$\approx (-4.33013, -2.5)$



Point *a* rectangular coordinates (7, 3)

$$r = \sqrt{[(7)^2 + (3)^2]} = \sqrt{[49 + 9]} = \sqrt{58}$$

$$= \sqrt{58}$$

angle formed by positive x axis can be found with inverse trigonometry

$$\tan(\theta) = 3/7 \quad \text{so} \quad \theta = \tan^{-1}(3/7)$$

$$\theta = 23.1986^\circ \quad \text{or} \quad \theta = 0.404892 \text{ radians}$$

Polar coordinates

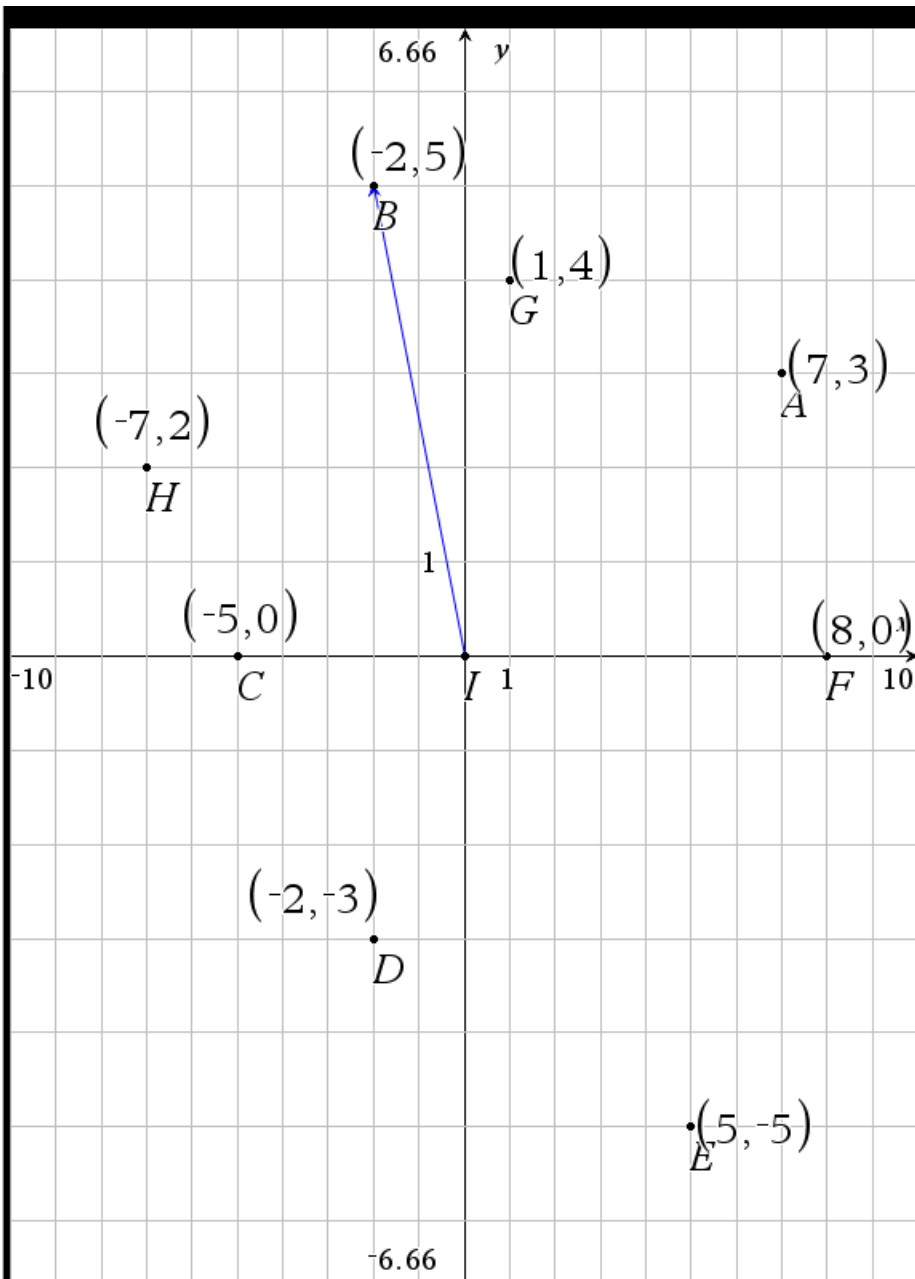
$$(\sqrt{58}, \tan^{-1}(3/7))$$

$$(\sqrt{58}, 23.1986^\circ) \quad \text{or} \quad (\sqrt{58}, 0.404892 \text{ radians})$$

$$(7.61577, 23.1986^\circ) \quad \text{or}$$

$$(7.61577, 0.404892 \text{ radians})$$

	A	B	C	D	E	F
=						
1 x			7	point	a	
2 y			3			
3						
C7	point					



Point **b** rectangular coordinates $(-2, 5)$

$$r = \sqrt{(-2)^2 + (5)^2} = \sqrt{4 + 25} = \sqrt{29}$$

$$= \sqrt{29}$$

angle formed by positive x axis can be found with inverse trigonometry

$$\tan(\theta) = 5/-2 \quad \text{so} \quad \theta = \tan^{-1}(5/-2)$$

$$\theta = -68.1986^\circ \quad \text{or} \quad \theta = -1.19029 \text{ radians}$$

$$\text{OR } \theta = 111.801^\circ \quad \text{or} \quad \theta = 1.9513 \text{ radians}$$

Polar coordinates

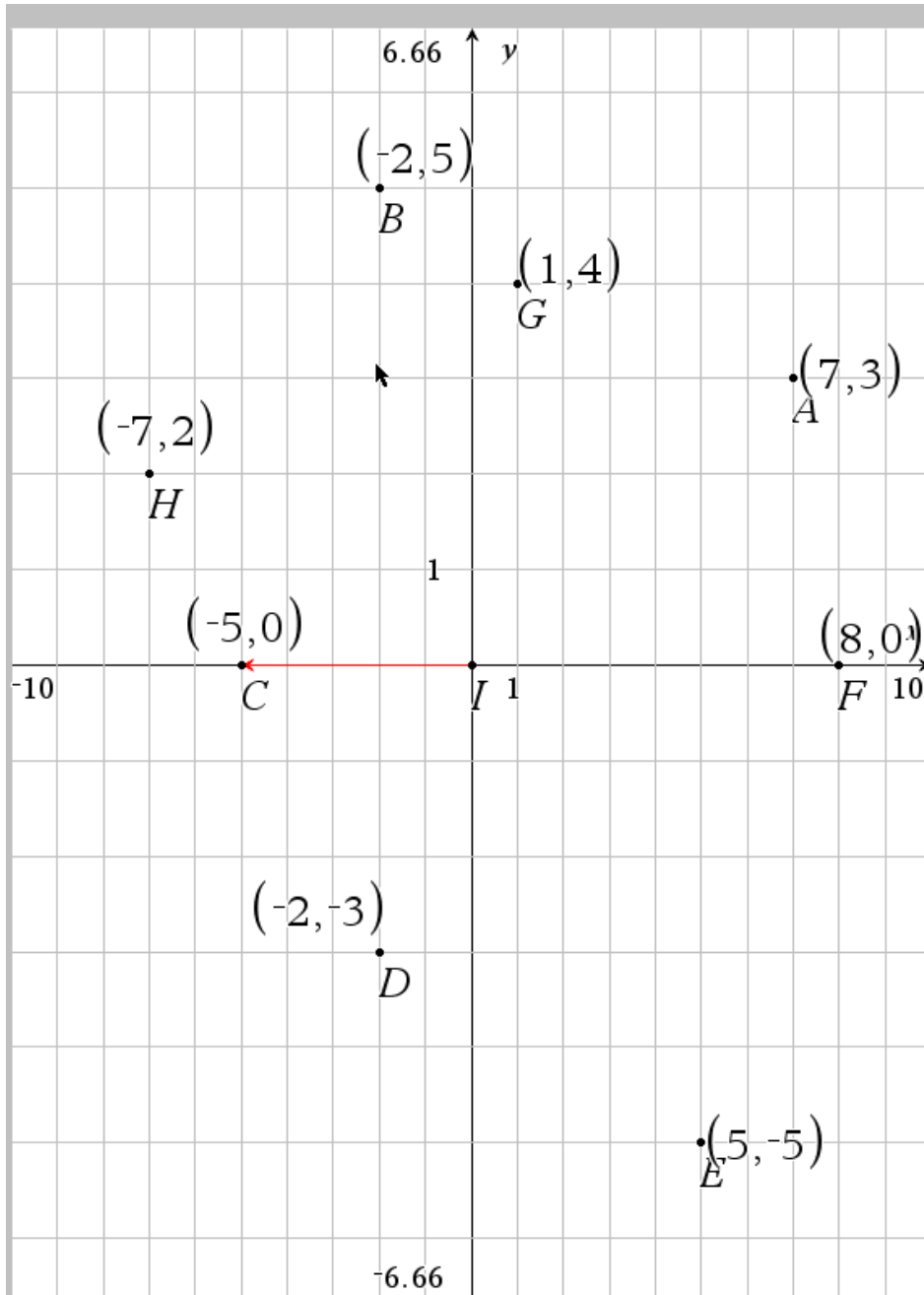
$$(\sqrt{29}, \tan^{-1}(5/-2))$$

$$(\sqrt{29}, 111.801^\circ) \quad \text{or} \quad (\sqrt{29}, 1.9513 \text{ radians})$$

$$(5.38516, 111.801^\circ) \quad \text{or}$$

$$(5.38516, 1.9513 \text{ radians})$$

	A	B	C	D	E	F
=						
1 x			-2 point	b		
2 y			5			
3						
D1	b					



Point **c** rectangular coordinates $(-5, 0)$

$$r = \sqrt{(-5)^2 + (0)^2} = \sqrt{25 + 0} = \sqrt{25} = 5$$

angle formed by positive x axis can be found with inverse trigonometry

$$\tan(\theta) = 0/-5 \quad \text{so} \quad \theta = \tan^{-1}(0/-5)$$

$$\theta = 180.^\circ \quad \text{or} \quad \theta = 3.14159 \text{ radians}$$

Polar coordinates

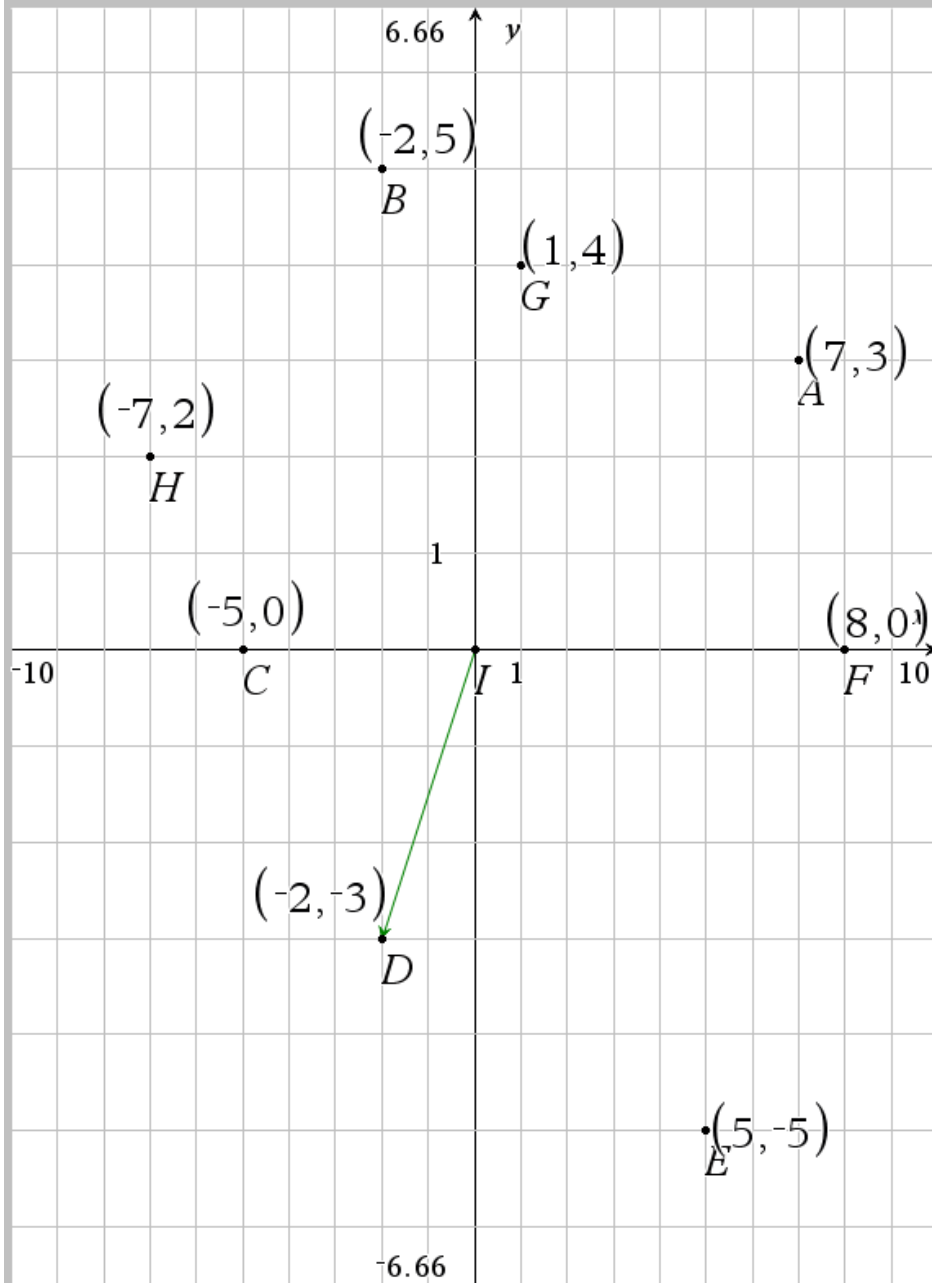
$$(5, \tan^{-1}(0/-5))$$

$$(5, 180.^\circ) \quad \text{or} \quad (5, \pi \text{ radians})$$

$$(5., 180.^\circ) \quad \text{or}$$

$$(5., 3.14159 \text{ radians})$$

	A	B	C	D	E	F
=						
1	x		-5 point	c		
2	y		0			
3						
B2	0					



Point d rectangular coordinates $(-2, -3)$

$$r = \sqrt{(-2)^2 + (-3)^2} = \sqrt{4 + 9} = \sqrt{13}$$

$$= \sqrt{13}$$

angle formed by positive x axis can be found with inverse trigonometry

$$\tan(\theta) = -3/-2 \quad \text{so} \quad \theta = \tan^{-1}(-3/-2)$$

$$\theta = 56.3099^\circ \quad \text{or} \quad \theta = 0.982794 \text{ radians}$$

$$\text{OR } \theta = 236.31^\circ \quad \text{or} \quad \theta = 4.12439 \text{ radians}$$

Polar coordinates

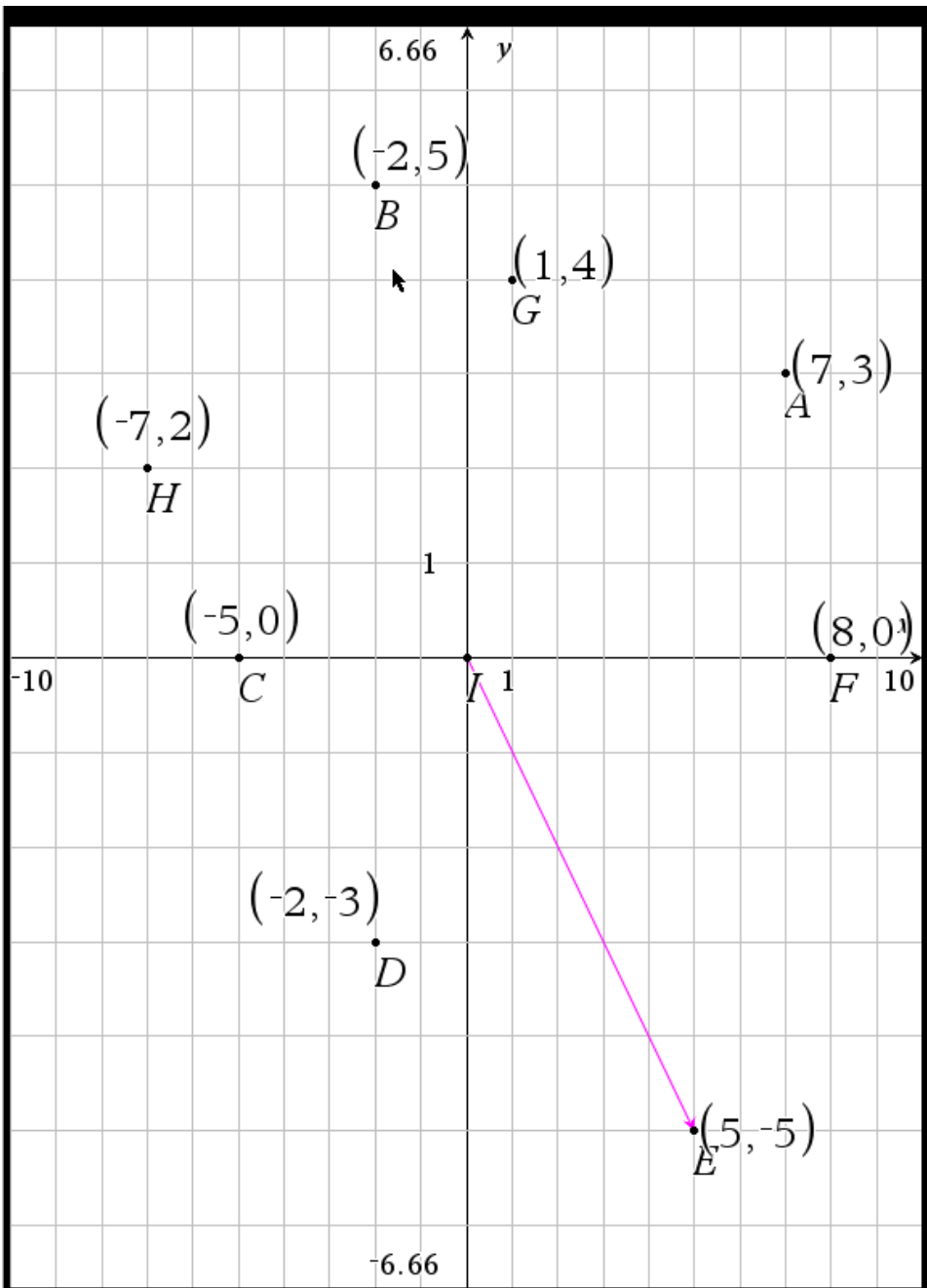
$$(\sqrt{13}, \tan^{-1}(-3/-2))$$

$$(\sqrt{13}, 236.31^\circ) \quad \text{or} \quad (\sqrt{13}, 4.12439 \text{ radians})$$

$$(3.60555, 236.31^\circ) \quad \text{or}$$

$$(3.60555, 4.12439 \text{ radians})$$

	A	B	C	D	E	F
=						
x			z point	a		
2 y			-3			
3						
B3						



Point *e* rectangular coordinates (5, -5)

$$r = \sqrt{[(5)^2 + (-5)^2]} = \sqrt{[25 + 25]} = \sqrt{(50)}$$

$$= 5 \cdot \sqrt{2}$$

angle formed by positive x axis can be found with inverse trigonometry

$$\tan(\theta) = -5/5 \quad \text{so} \quad \theta = \tan^{-1}(-5/5)$$

$$\theta = -45.^\circ \quad \text{or} \quad \theta = -0.785398 \text{ radians}$$

$$\text{OR } \theta = 315.^\circ \quad \text{or} \quad \theta = 5.49779 \text{ radians}$$

Polar coordinates

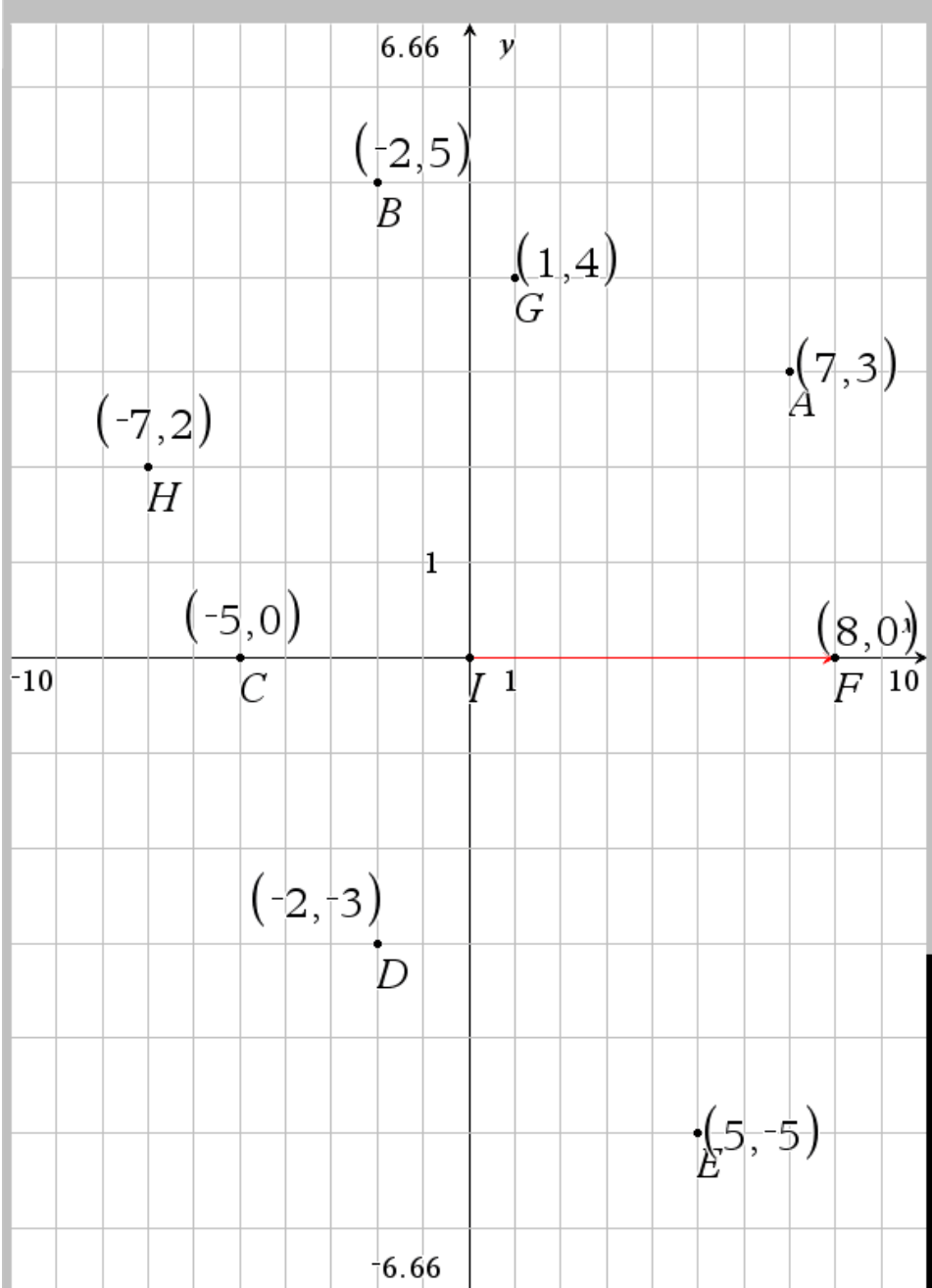
$$(5 \cdot \sqrt{2}, \tan^{-1}(-5/5))$$

$$(5 \cdot \sqrt{2}, 315.^\circ) \quad \text{or} \quad (5 \cdot \sqrt{2}, 5.49779 \text{ radians})$$

$$(7.07107, 315.^\circ) \quad \text{or}$$

$$(7.07107, 5.49779 \text{ radians})$$

	A	B	C	D	E	F
=						
1 x			5 point	e		
2 y			-5			
3						



Point *f* rectangular coordinates (8, 0)

$$r = \sqrt{[(8)^2 + (0)^2]} = \sqrt{[64 + 0]} = \sqrt{64} = 8$$

angle formed by positive x axis can be found with inverse trigonometry

$$\tan(\theta) = 0/8 \quad \text{so} \quad \theta = \tan^{-1}(0/8)$$

$$\theta = 0.^\circ \quad \text{or} \quad \theta = 0. \text{ radians}$$

Polar coordinates

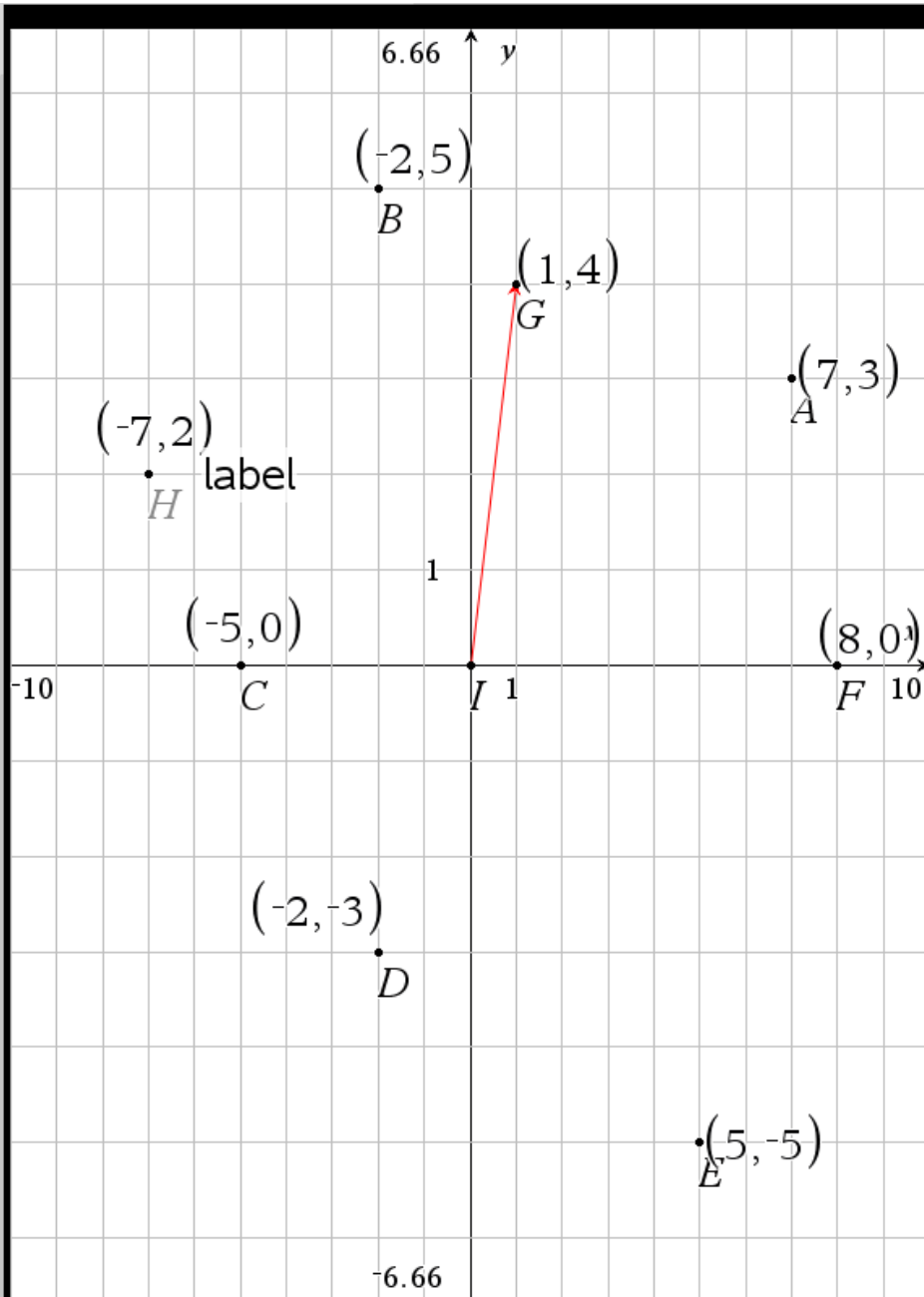
$$(8, \tan^{-1}(0/8))$$

$$(8, 0.^\circ) \quad \text{or} \quad (8, 0. \text{ radians})$$

$$(8., 0.^\circ) \quad \text{or}$$

$$(8., 0. \text{ radians})$$

	A	B	C	D	E	F
=						
1 x			8 point	f		
2 y			0			
3						
D2						



Point **g** rectangular coordinates $(7, 3)$

$$r = \sqrt{[(7)^2 + (3)^2]} = \sqrt{[49 + 9]} = \sqrt{(58)}$$

$$= \sqrt{58}$$

angle formed by positive x axis can be found with inverse trigonometry

$$\tan(\theta) = 3/7 \quad \text{so} \quad \theta = \tan^{-1}(3/7)$$

$$\theta = 23.1986^\circ \quad \text{or} \quad \theta = 0.404892 \text{ radians}$$

Polar coordinates

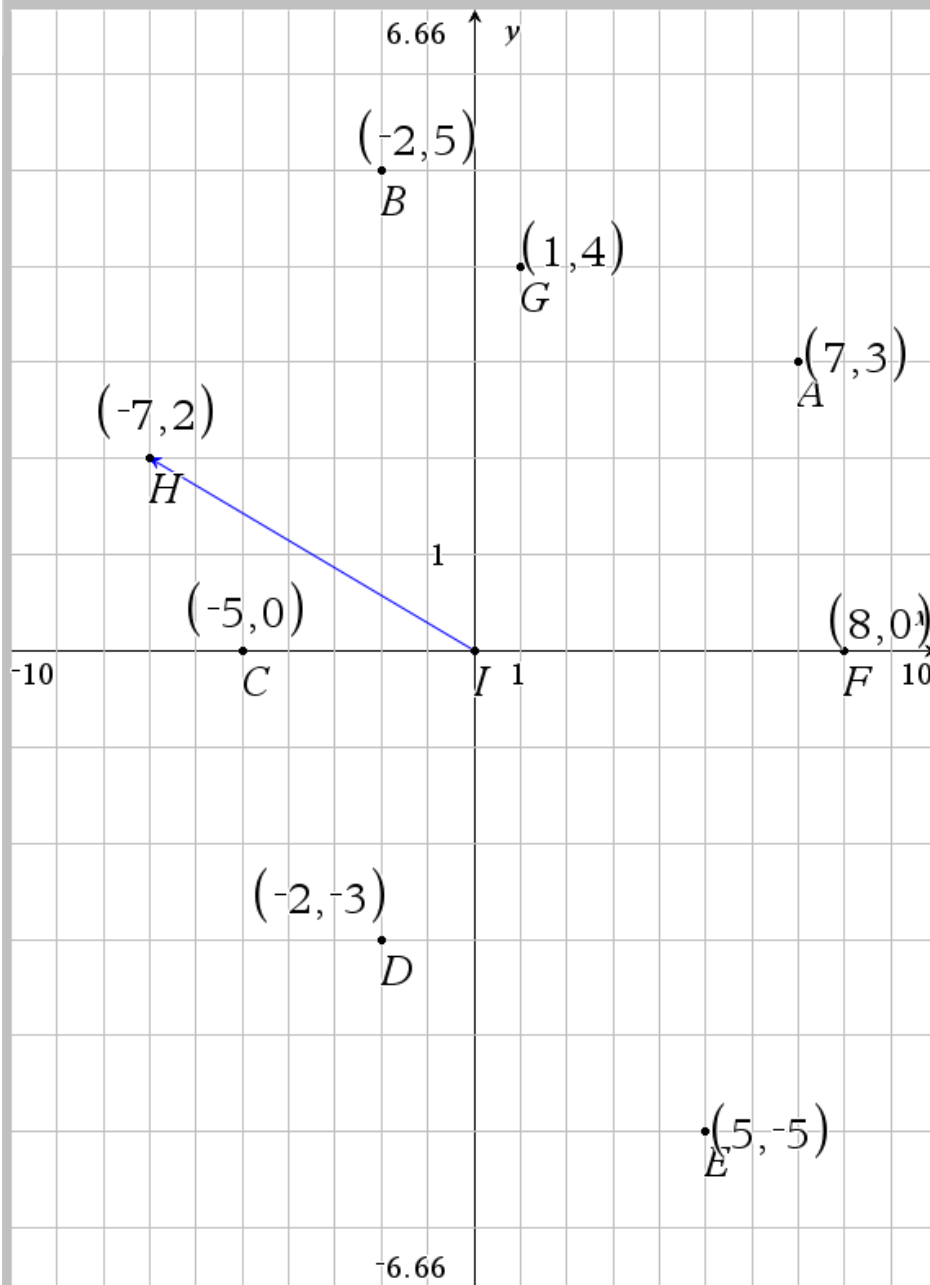
$$(\sqrt{58}, \tan^{-1}(3/7))$$

$$(\sqrt{58}, 23.1986^\circ) \quad \text{or} \quad (\sqrt{58}, 0.404892 \text{ radians})$$

$$(7.61577, 23.1986^\circ) \quad \text{or}$$

$$(7.61577, 0.404892 \text{ radians})$$

	A	B	C	D	E	F
=						
1 x			7 point	g		
2 y			3			
3						
D2						



Point h rectangular coordinates $(-7, 2)$

$$r = \sqrt{(-7)^2 + (2)^2} = \sqrt{49 + 4} = \sqrt{53}$$

$$= \sqrt{53}$$

angle formed by positive x axis can be found with inverse trigonometry

$$\tan(\theta) = 2/-7 \quad \text{so} \quad \theta = \tan^{-1}(2/-7)$$

$$\theta = -15.9454^\circ \quad \text{or} \quad \theta = -0.2783 \text{ radians}$$

$$\text{OR } \theta = 164.055^\circ \quad \text{or} \quad \theta = 2.86329 \text{ radians}$$

Polar coordinates

$$(\sqrt{53}, \tan^{-1}(2/-7))$$

$$(\sqrt{53}, 164.055^\circ) \quad \text{or} \quad (\sqrt{53}, 2.86329 \text{ radians})$$

$$(7.28011, 164.055^\circ) \quad \text{or}$$

$$(7.28011, 2.86329 \text{ radians})$$

	A	B	C	D	E	F
=						
1 x			-7 point	h		
2 y			2			
3						
E1						