

Trig 9.1

Graph polar coordinates
 Graph polar equations
 Determine distance between 2 polar coordinates

ordered pair

Cartesian coordinates

polar coordinate system

polar axis

pole (origin)

polar equation

polar graph

distance

activity: floor graphs

No exit ticket: quiz results
 Ch. 9 study guide & WB

(r, θ)

$P(1, \sqrt{3})$
 (r, θ)

$\pi/2$

$3\pi/2$

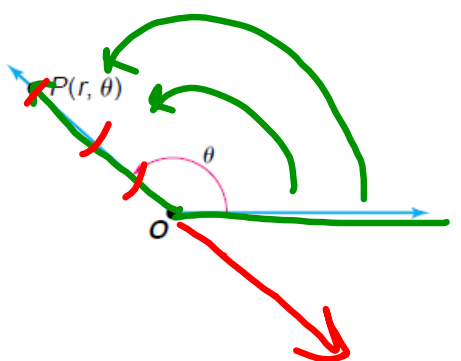
CCW

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Find each cross product. Then verify if the resulting vector is perpendicular to the given vectors.

4 . 38. $\langle 5, -2, 5 \rangle \times \langle -1, 0, -3 \rangle$

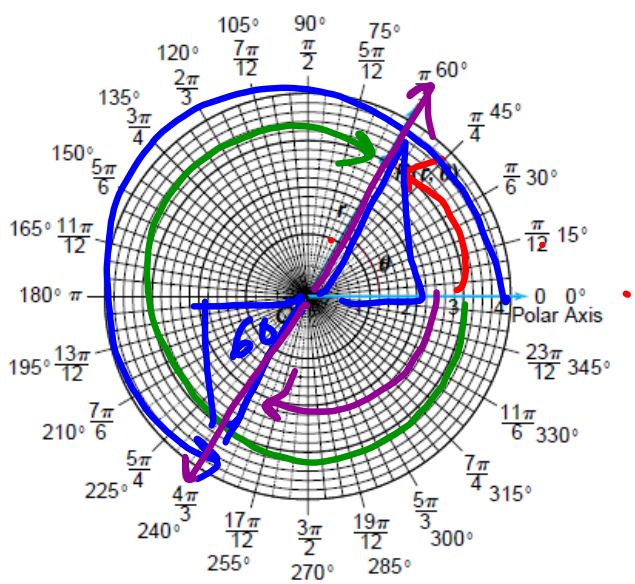
Mar 25-6:05 PM



$(3, 120^\circ)$
 $(-3, 120^\circ)$

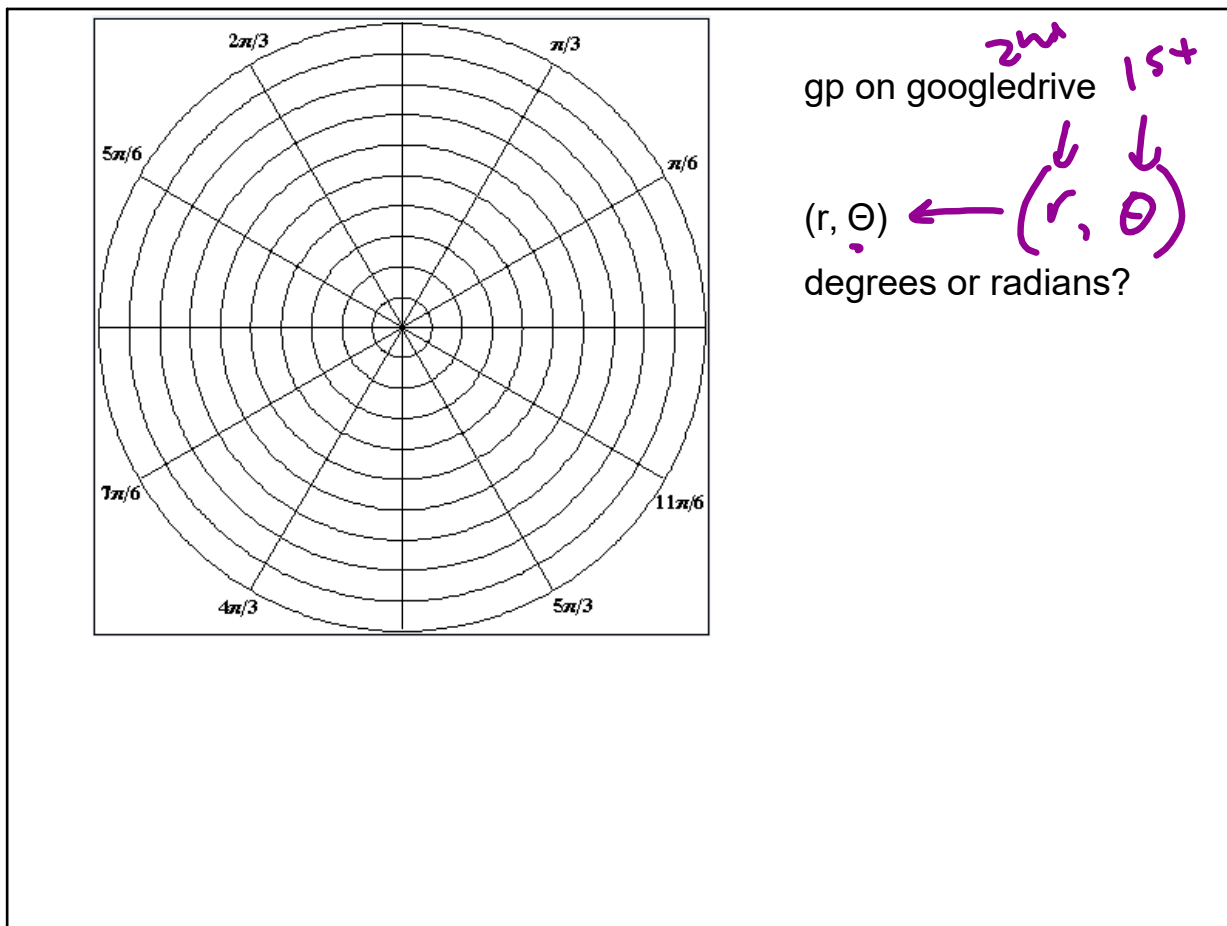
But what if the angle is negative?
Floor graphs

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$(3, 60^\circ)$
 $(3, -30^\circ)$
 $(-3, 240^\circ)$
 $(-3, -120^\circ)$

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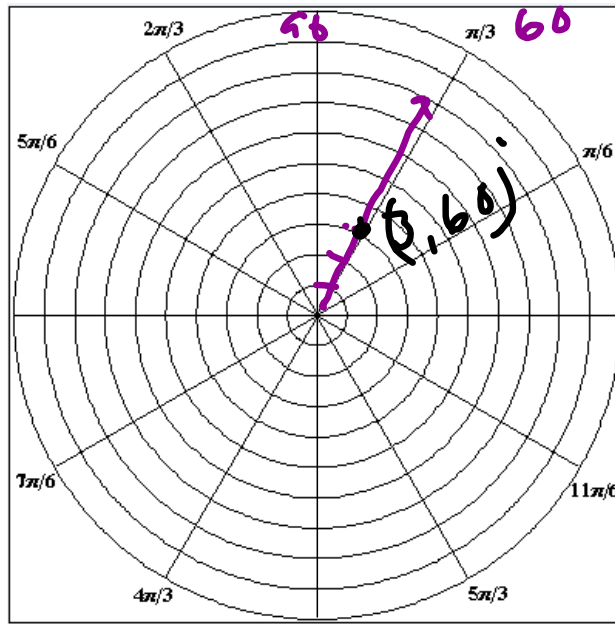
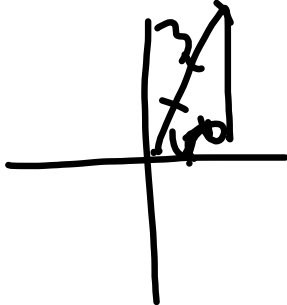
Aug 27-9:08 AM

What if the distance is negative? *back up*

May 1-8:43 PM

1 Graph each point.

a. $P(3, 60^\circ)$

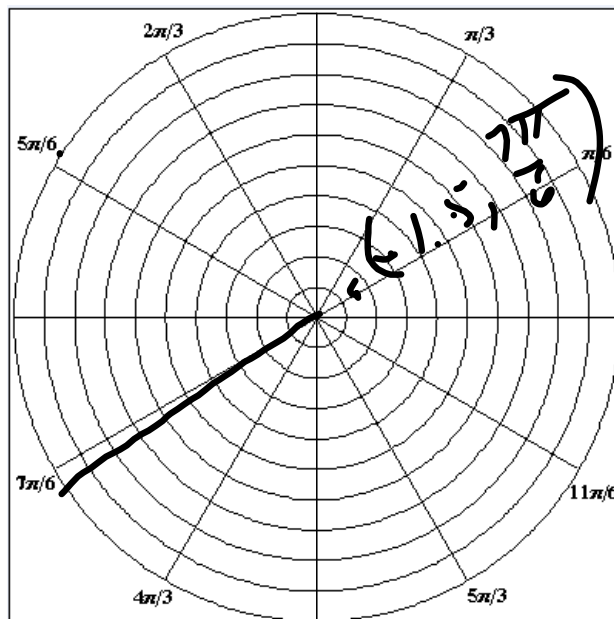


30
60

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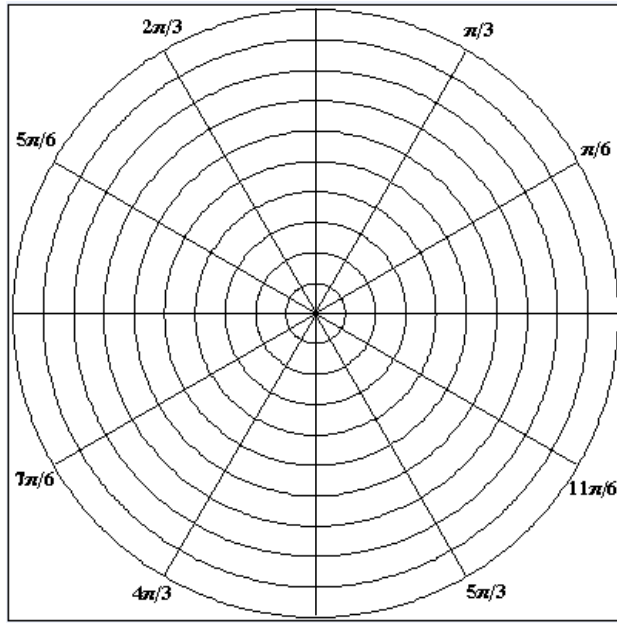
b. $Q(-1.5, \frac{7\pi}{6})$

Handwritten notes: $\frac{7\pi}{6}$ with arrows pointing to the angle in the polar coordinate label, and $\frac{1.5}{2}$ with a vertical line through it.



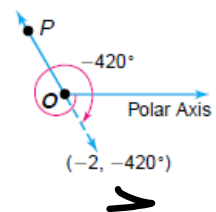
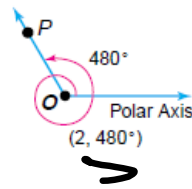
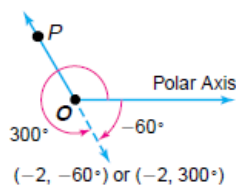
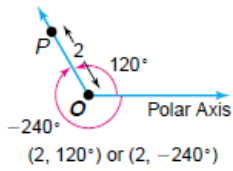
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2 Graph $R(-2, -135^\circ)$.



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Name the point 4 ways:



(r, θ) 30°
 $+360n$ 390°

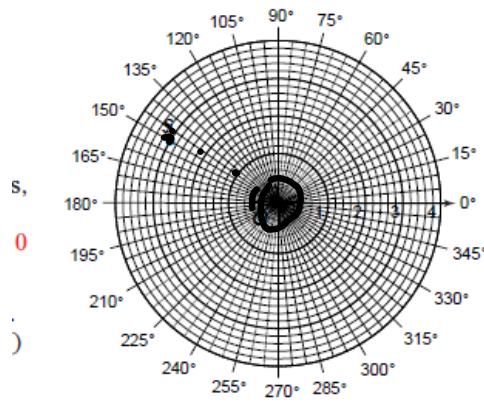
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E.T.

3 Name four different pairs of polar coordinates that represent point S on the graph with the restriction that $-360^\circ \leq \theta \leq 360^\circ$.

trig. name. date
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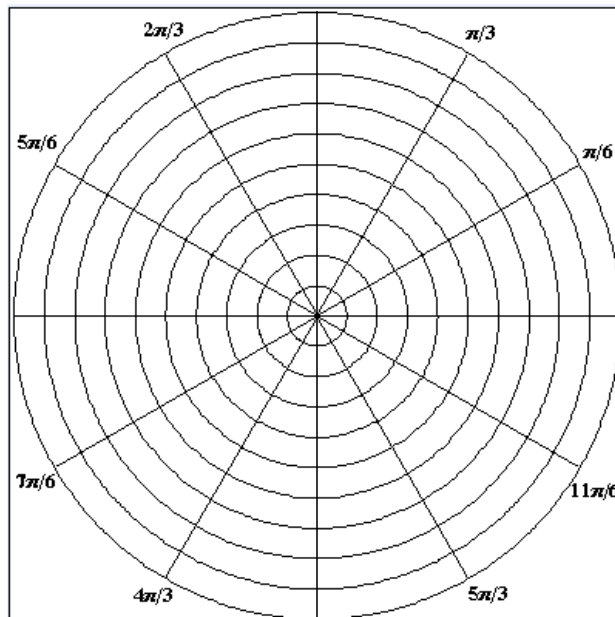
Book 9.1
1-270



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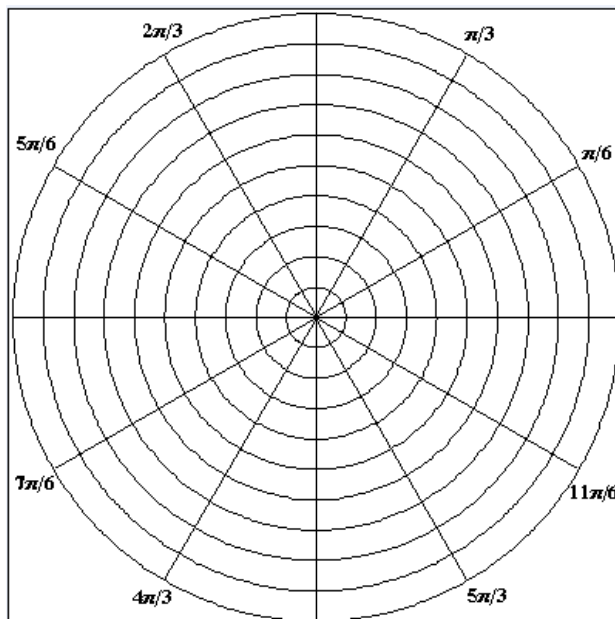
4 Graph each polar equation.

a. $r = 3$



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b. $\theta = \frac{3\pi}{4}$



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**Distance
Formula in
Polar Plane**

If $P_1(r_1, \theta_1)$ and $P_2(r_2, \theta_2)$ are two points in the polar plane, then

$$P_1P_2 = \sqrt{r_1^2 + r_2^2 - 2r_1r_2 \cos(\theta_2 - \theta_1)}$$

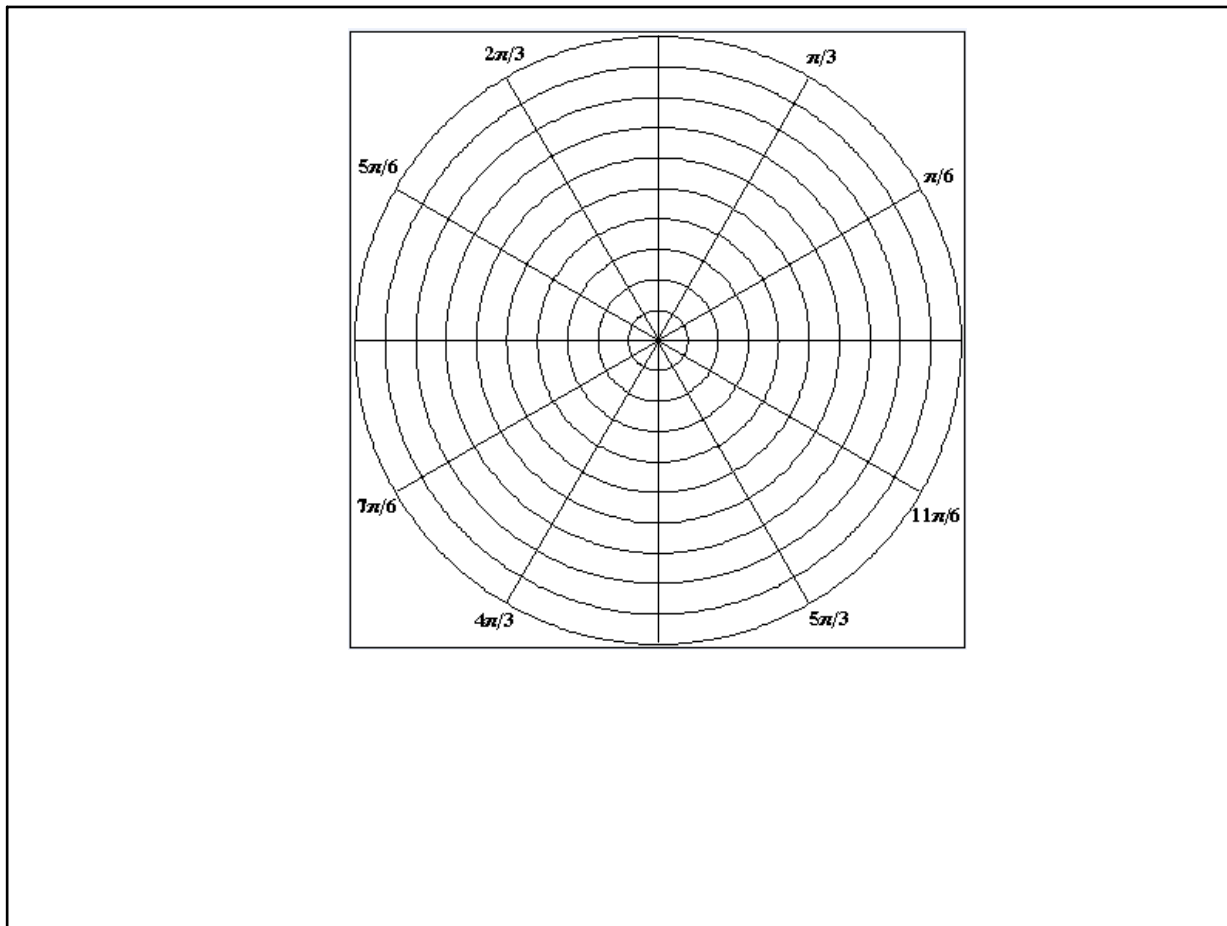
Not sure this formula is worthy: comes from law of cosines

Find the distance between the points with the given polar coordinates.

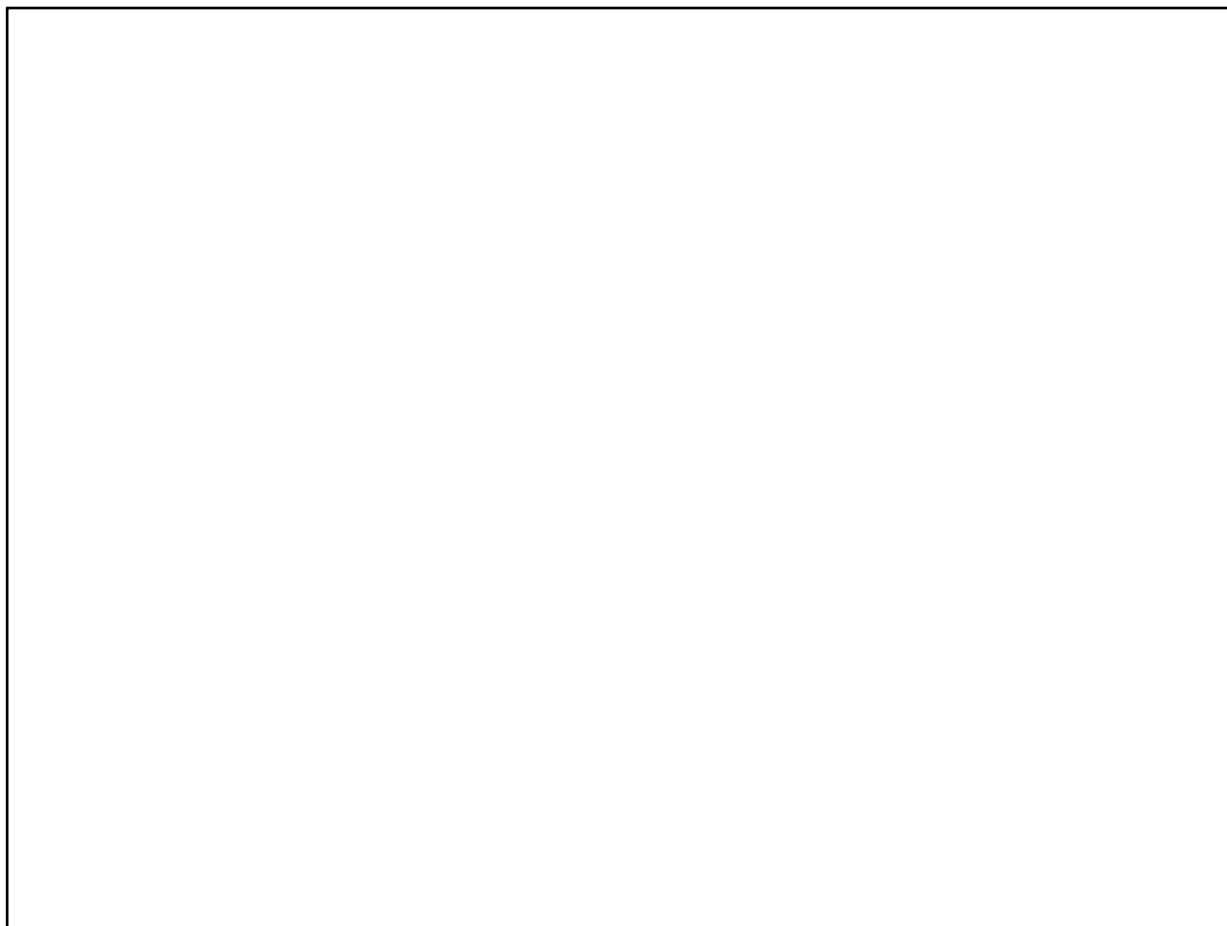
Why $x_2 - x_1$?

42. $P_1(4, 170^\circ)$ and $P_2(6, 105^\circ)$

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Aug 27-10:04 AM



Apr 22-12:20 PM