1) ∠XOA, ∠XOB, ∠XOC, and ∠XOD have reference angles of 30°. Complete a sketch of each angle on the figure. Give the measure of each angle in degrees and radians and give the coordinates of points A, B, C, and D.

(0,1)

___ **deg**

___ **deg**

(,) B

A (,)

___ **rad**

___ **rad**

r = 1

(-1,0)

θ=30°

(1,0)

O

X

___ **deg**

___ **deg**

(,) C

D (,)

___ **rad**

___ **rad**

(0,-1)
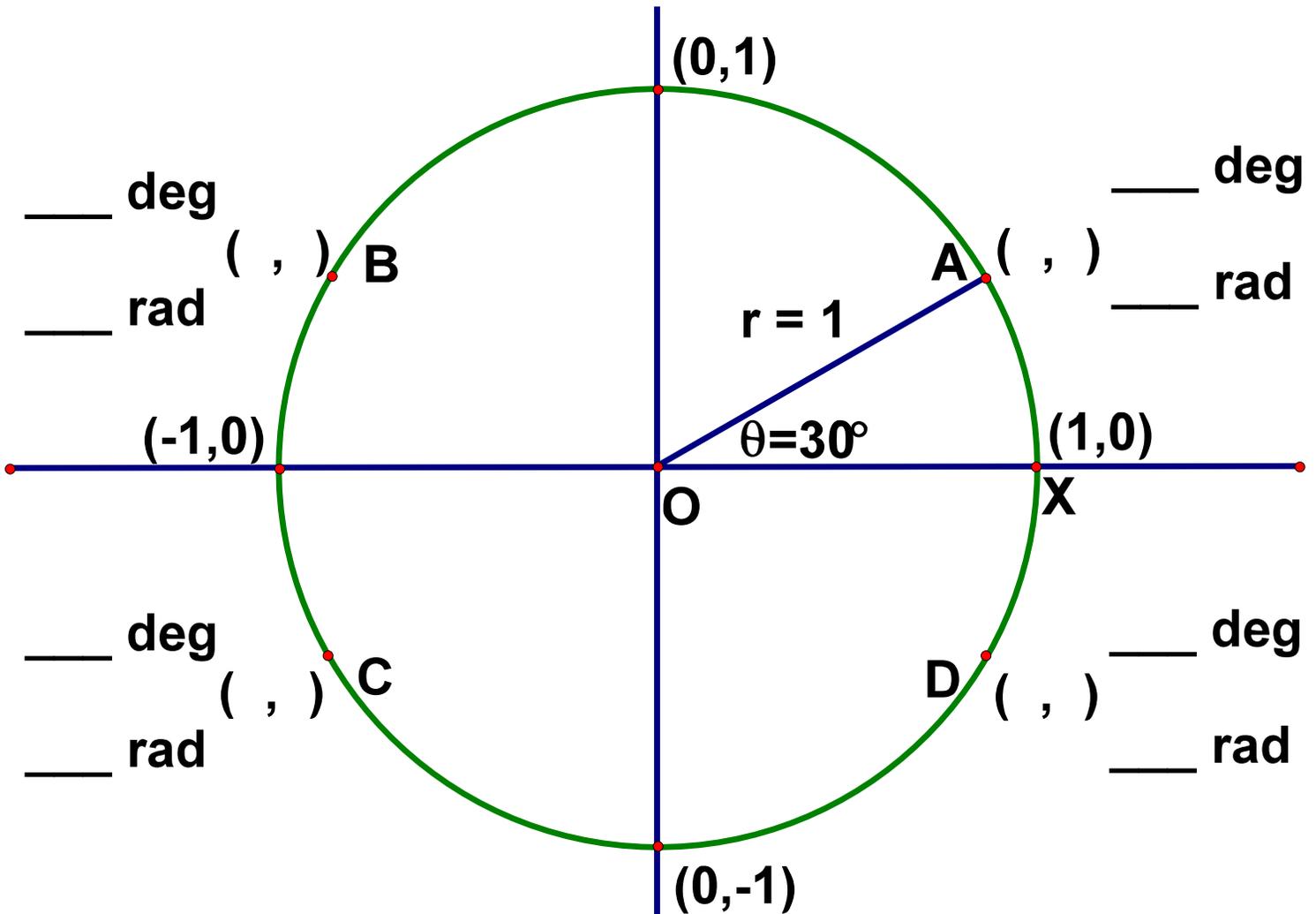
2) Give each ratio below in general.
Sin =   , Cos =   , Tan =   , Csc =   , Sec =   , Cot =

3) Give each ratio below on the coordinate plane.
Sin =   , Cos =   , Tan =   , Csc =   , Sec =   , Cot =

4) Give each ratio below on the unit circle.
Sin =   , Cos =   , Tan =   , Csc =   , Sec =   , Cot =

Give the radian measure for each angle below. Use the unit circle above to give the sine, cosine, and tangent ratios of each angle in fraction and decimal form.
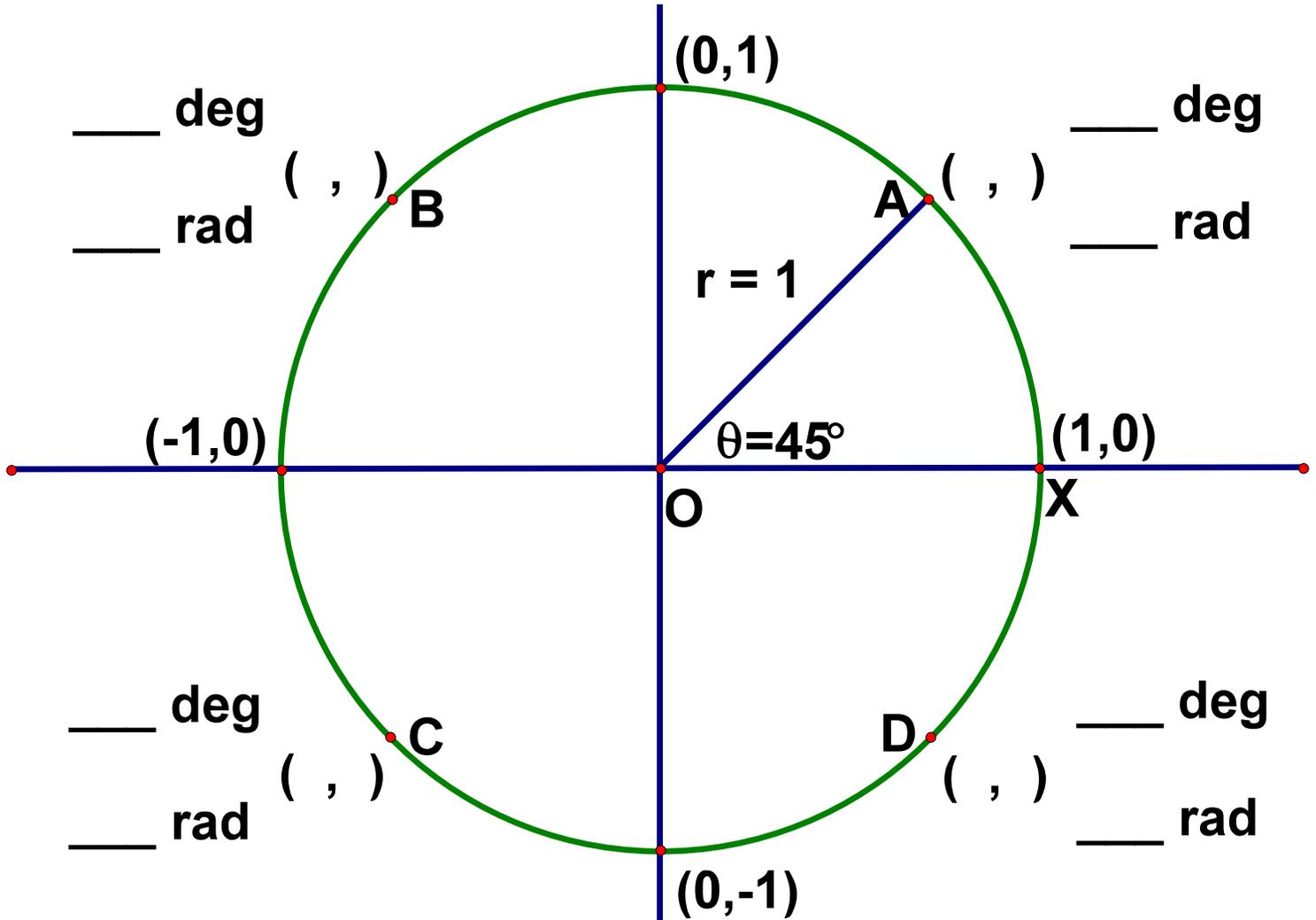5) ∠XOA   6)   ∠XOB   7)   ∠XOC   8) ∠XOD

9) ∠XOA, ∠XOB, ∠XOC, and ∠XOD have reference angles of 45°. Complete a sketch of each angle on the figure. Give the measure of each angle in degrees and radians and give the coordinates of points A, B, C, and D.

___ deg

(,) B

___ rad

(0,1)

A (,) ___ deg

___ rad

r = 1

(-1,0)

θ=45°

O

(1,0)

X

___ deg

C

(,)

___ rad

D

(,)

___ deg

___ rad

(0,-1)

10) Give each ratio below in general.
Sin =   , Cos =   , Tan =   , Csc =   , Sec =   , Cot =

11) Give each ratio below on the coordinate plane.
Sin =   , Cos =   , Tan =   , Csc =   , Sec =   , Cot =

12) Give each ratio below on the unit circle.
Sin =   , Cos =   , Tan =   , Csc =   , Sec =   , Cot =

Give the radian measure for each angle below. Use the unit circle above to give the sine, cosine, and tangent ratios of each angle in fraction and decimal form.
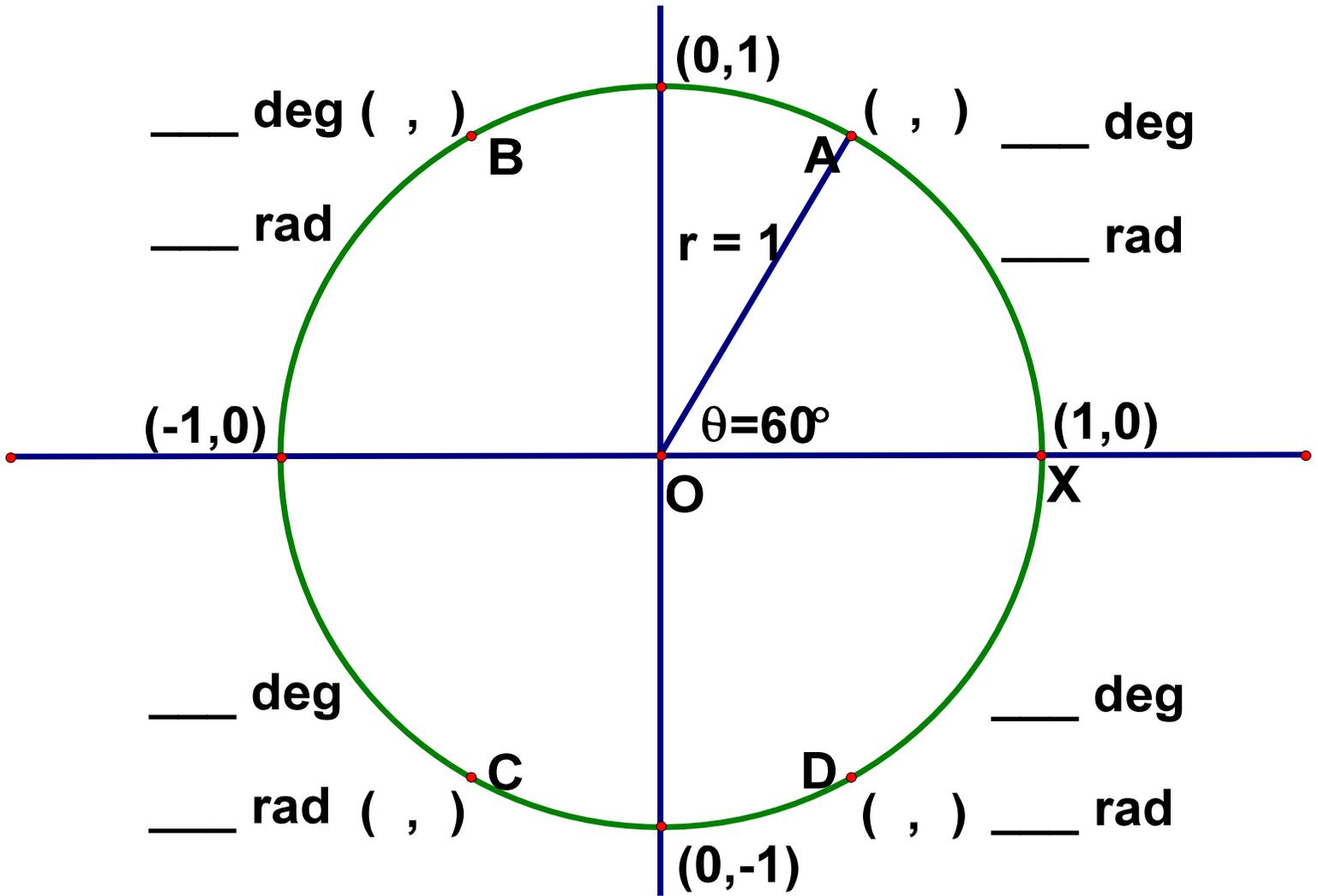13) ∠XOA   14)   ∠XOB   15)   ∠XOC   16) ∠XOD

17) ∠XOA, ∠XOB, ∠XOC, and ∠XOD have reference angles of 60°. Complete a sketch of each angle on the figure. Give the measure of each angle in degrees and radians and give the coordinates of points A, B, C, and D.

(0,1)

____ deg (,)
B

A (,) ____ deg

____ rad

r = 1

____ rad

(-1,0)

θ=60°

(1,0)

O

X

____ deg

____ deg

C

D

____ rad (,)

(,) ____ rad

(0,-1)

18) Give each ratio below in general.
Sin = , Cos = , Tan = , Csc = , Sec = , Cot =

19) Give each ratio below on the coordinate plane.
Sin = , Cos = , Tan = , Csc = , Sec = , Cot =

20) Give each ratio below on the unit circle.
Sin = , Cos = , Tan = , Csc = , Sec = , Cot =

Give the radian measure for each angle below. Use the unit circle above to give the sine, cosine, and tangent ratios of each angle in fraction and decimal form.

21) ∠XOA   22) ∠XOB   23) ∠XOC   24) ∠XOD