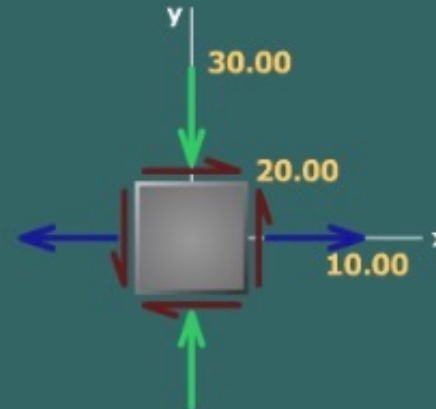One of the Mohr's circles shown is correct for the state of stress depicted on the stress element. Click on the correct Mohr's circle.

Question Q1.1
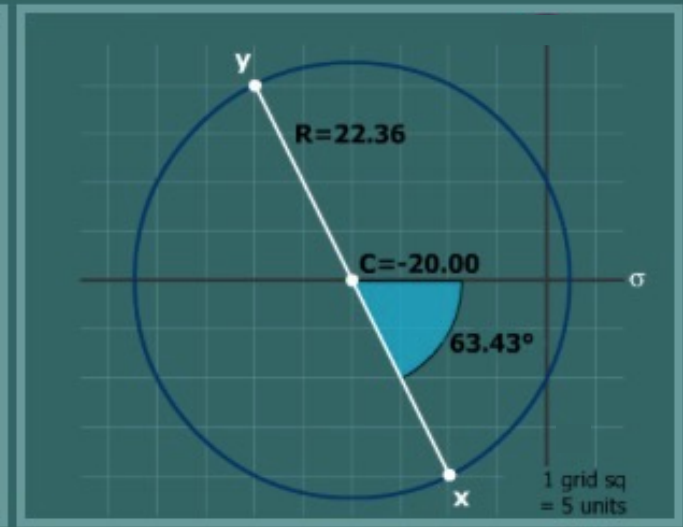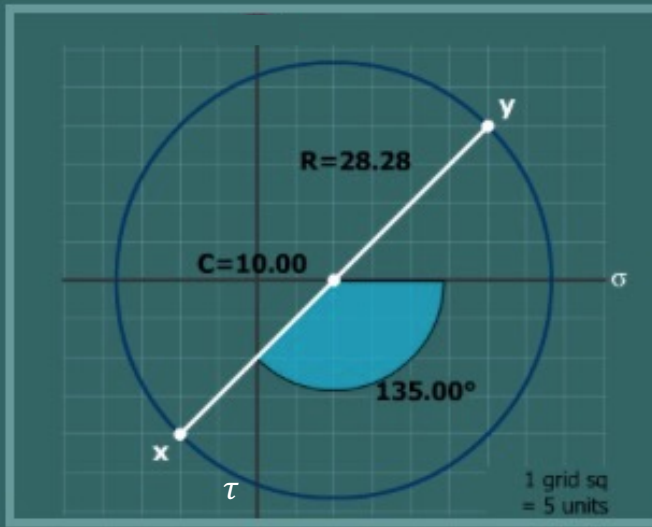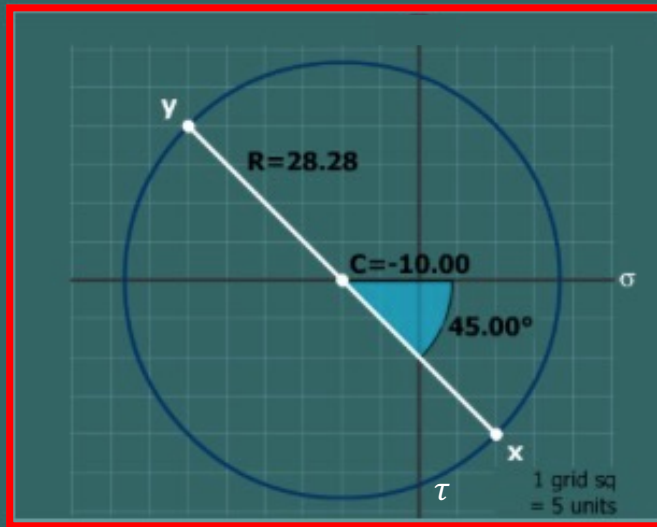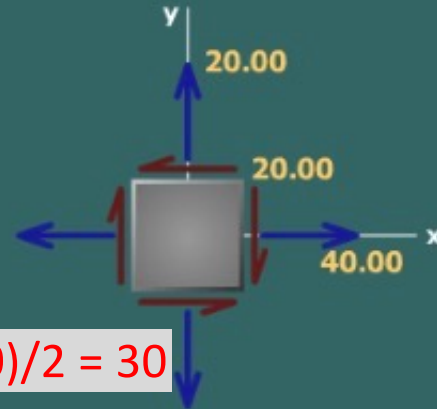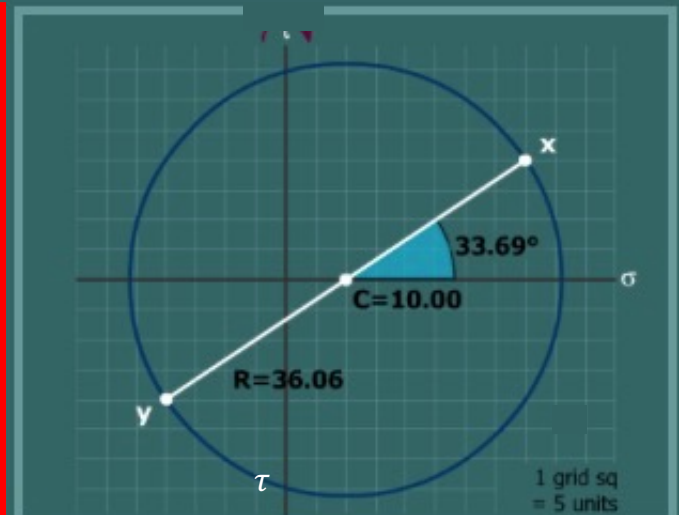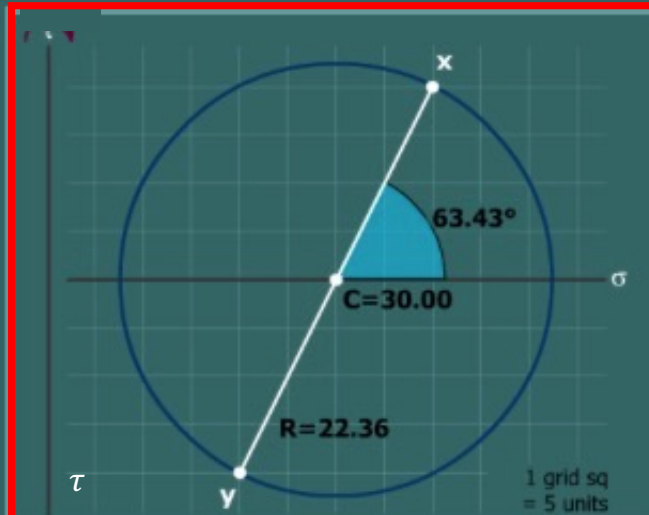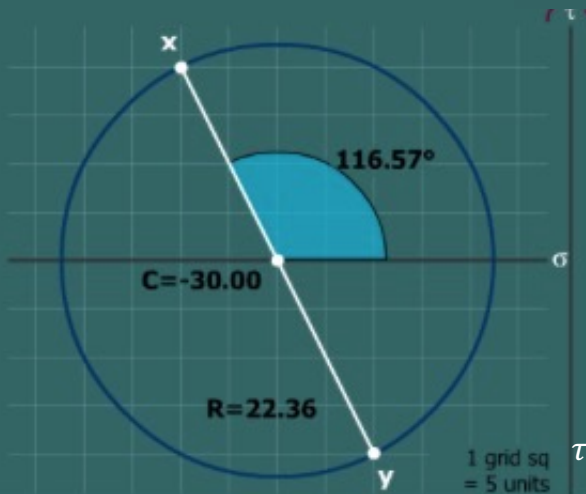
$\sigma_{ave} = (10-30)/2 = -10$

(a)

y

R=28.28

C=-10.00

45.00°

x

τ

1 grid sq = 5 units

(b)

y

R=28.28

C=10.00

135.00°

x

τ

1 grid sq = 5 units

(c)

y

R=22.36

C=-20.00

63.43°

x

1 grid sq = 5 units

One of the Mohr's circles shown is correct for the state of stress depicted on the stress element. Click on the correct Mohr's circle.

y
20.00
20.00
x
40.00

Question Q1.2

$\sigma_{ave}=(40+20)/2 = 30$

(a)

x
116.57°
C=-30.00
R=22.36
1 grid sq = 5 units
y
σ
τ

(b)

x
63.43°
C=30.00
R=22.36
1 grid sq = 5 units
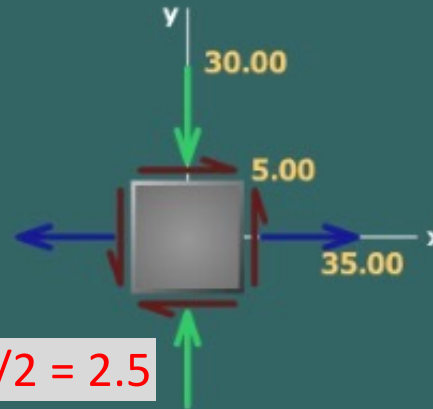y
σ
τ

(c)

x
33.69°
C=10.00
R=36.06
1 grid sq = 5 units
y
σ
τ

One of the Mohr's circles shown is correct for the state of stress depicted on the stress element. Click on the correct Mohr's circle.

y

30.00

5.00

x

35.00

Question Q1.3

$\sigma_{ave}=(35-30)/2 = 2.5$

$\tau_{xy} > 0$

(a)

(b)

(c)

x

8.75°

C=2.50

y

R=32.88

τ

1 grid sq = 5 units

y

R=32.88

C=2.50

8.75°

σ

x

τ

1 grid sq = 5 units

C=-2.50

R=32.88

y

σ

x

171.25°

τ

1 grid sq = 5 units

One of the Mohr's circles shown is correct for the state of stress depicted on the stress element. Click on the correct Mohr's circle.
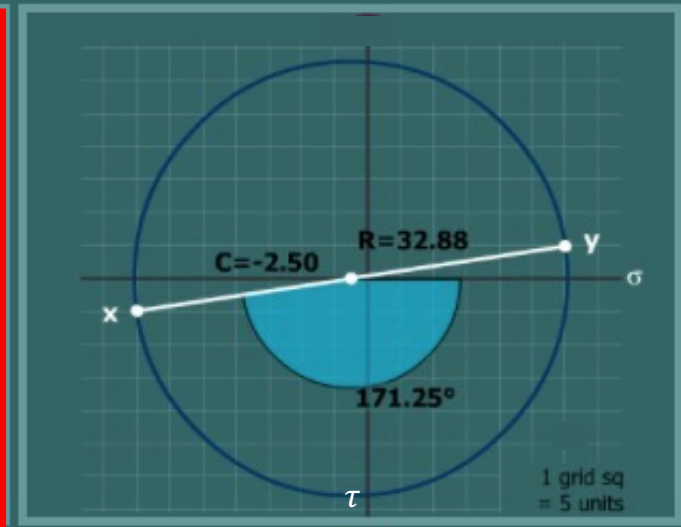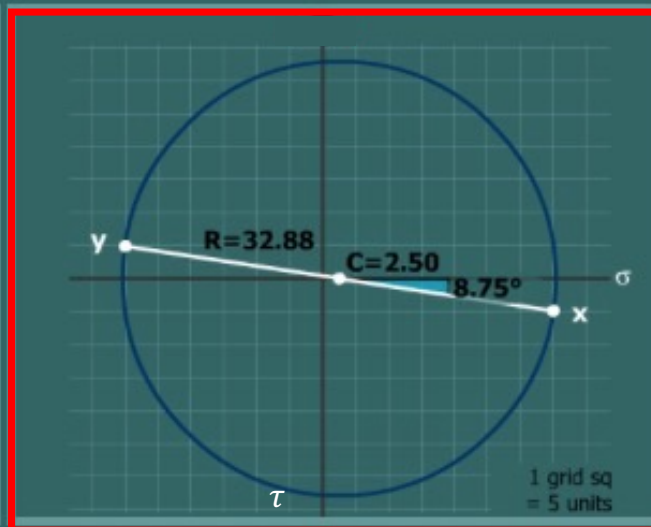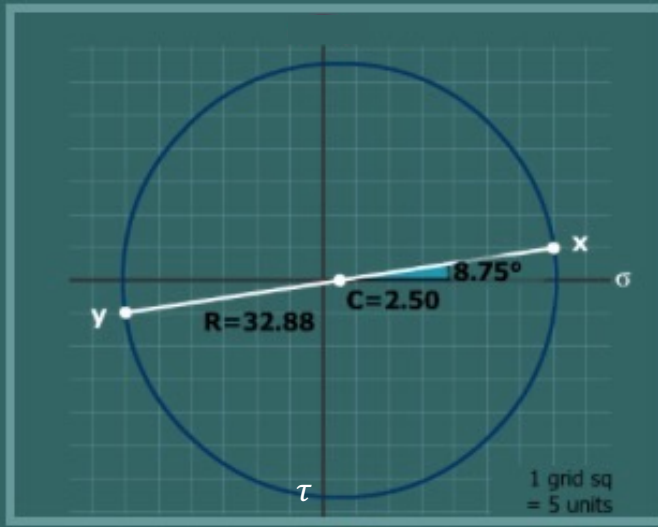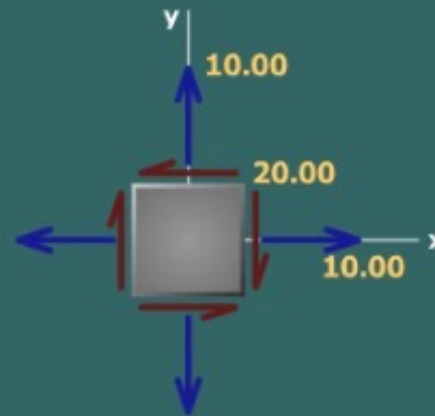
y

10.00

20.00

x

10.00

Question Q1.4

$\sigma_{ave}=(10+10)/2 = 10$

(a)

x

116.57°

C=0.00

R=22.36

τ

y

1 grid sq = 5 units

(b)

x

63.43°

C=0.00

σ

R=22.36

y τ

1 grid sq = 5 units
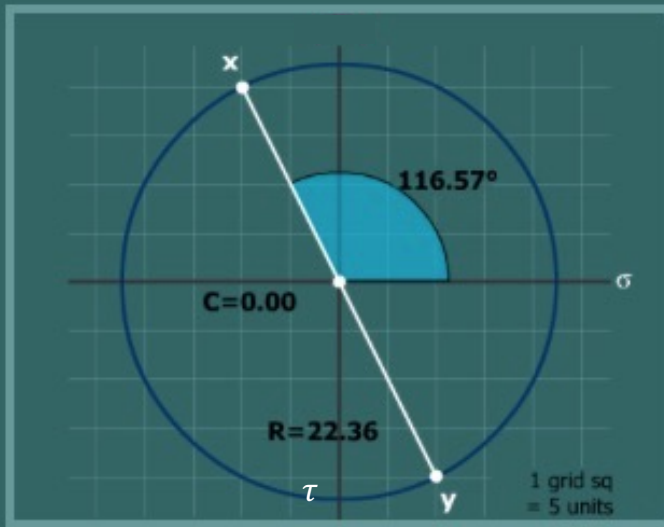
(c)

x

90.00°

C=10.00

σ

R=20.00

1 grid sq = 5 units

One of the Mohr's circles shown is
correct for the state of stress
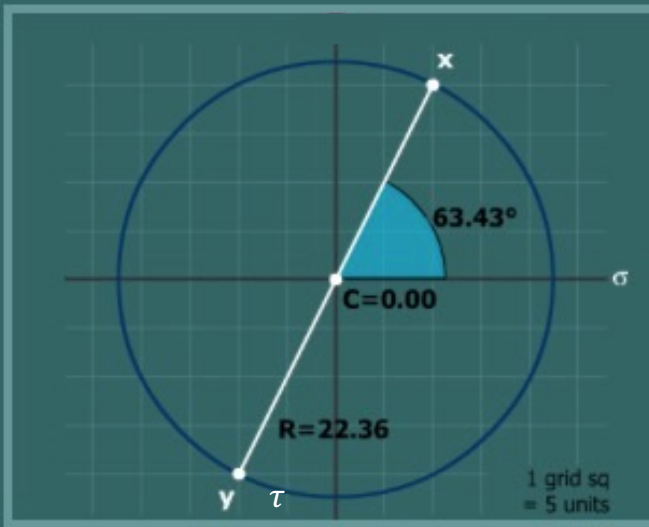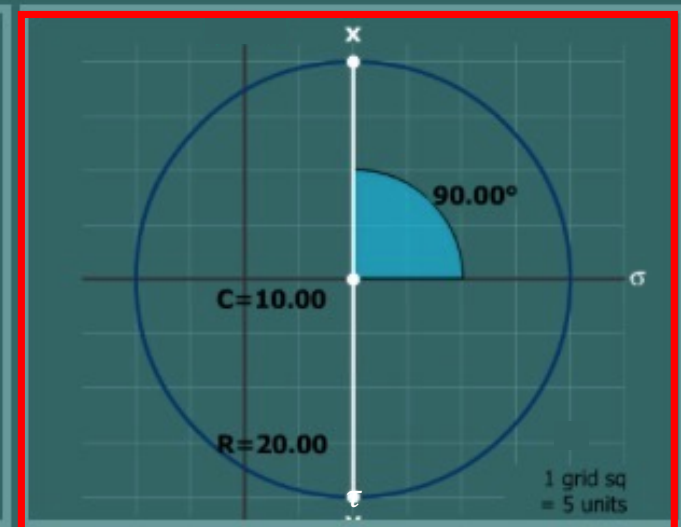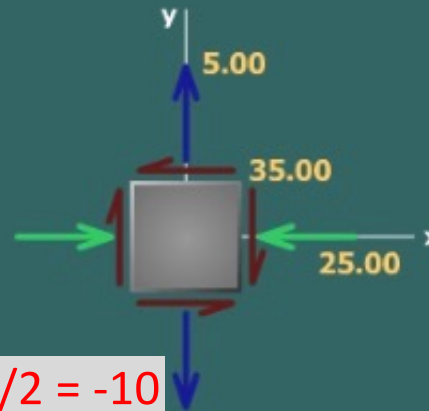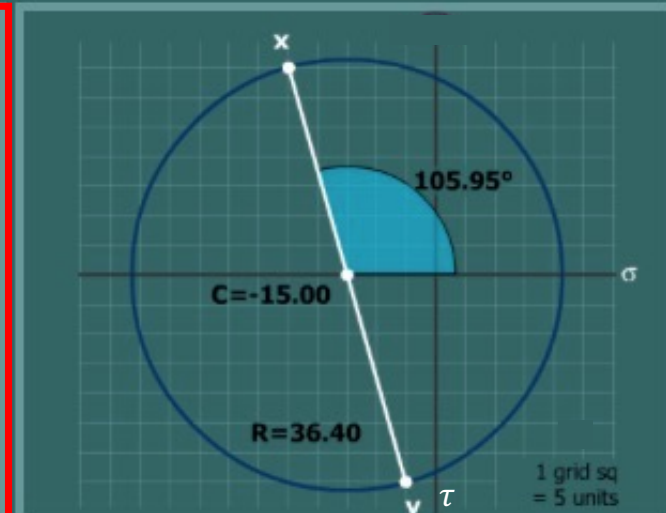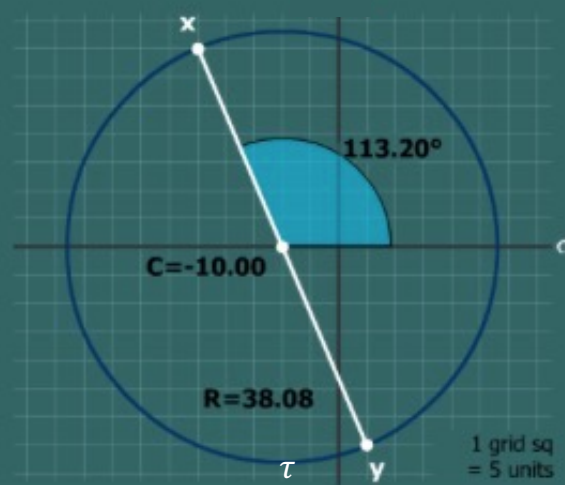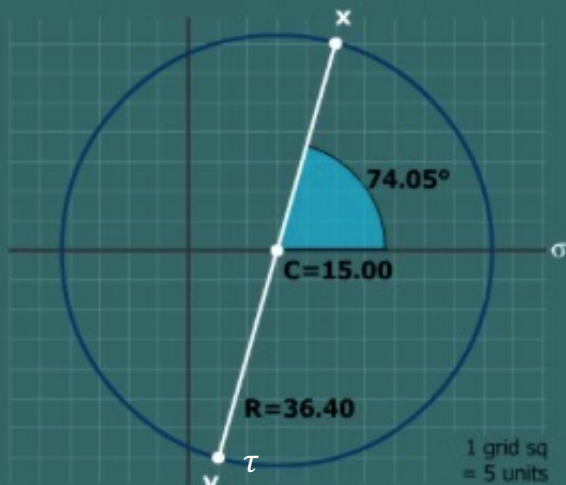depicted on the stress element. Click
on the correct Mohr's circle.

y

5.00

35.00

x

25.00

Question Q1.5

$\sigma_{ave} = (-25+5)/2 = -10$

(a)

74.05°

C=15.00

R=36.40

τ

1 grid sq
= 5 units

(b)

113.20°

C=-10.00

R=38.08

τ y

1 grid sq
= 5 units
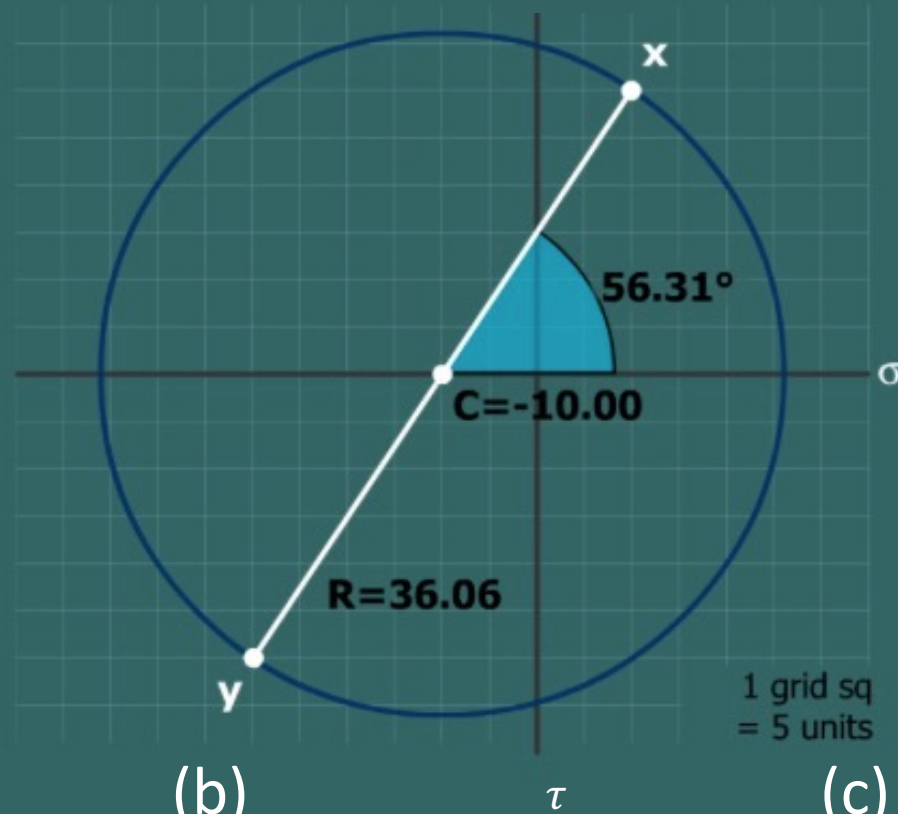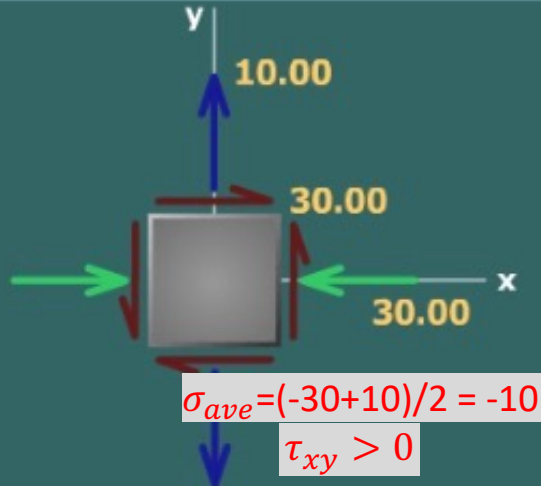
(c)

105.95°

C=-15.00

R=36.40

τ

1 grid sq
= 5 units

One of the stress elements shown is
correct for this Mohr's circle. Click on
the correct stress element.

Question Q2.1

x

56.31°

C=-10.00

σ

R=36.06

y

1 grid sq
= 5 units

τ

(a)

y

10.00

30.00

30.00

x

30.00

$\sigma_{ave}=(-30+10)/2 = -10$
$\tau_{xy} > 0$

(b)

y

30.00

30.00

10.00

x

$\sigma_{ave}=(-30+10)/2 = -10$
$\tau_{xy} < 0$

(c)

y

30.00

30.00

10.00
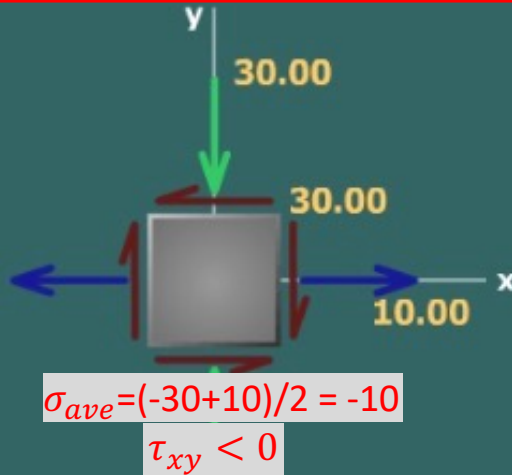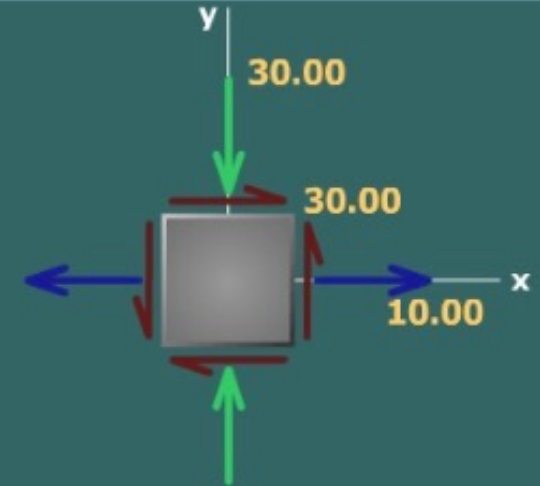
x

One of the stress elements shown is correct for this Mohr's circle. Click on the correct stress element.

R=35.79

C=-12.50

y

x

155.22°

σ

τ

1 grid sq = 5 units

Question Q2.2

(a)

y

20.00

15.00

x

45.00

$\sigma_{ave}=(-45+20)/2 = -12.5$

$\tau_{xy} > 0$

(b)

y

45.00

15.00

x

20.00

$\sigma_{ave}=(-45+20)/2 = -12.5$

$\tau_{xy} < 0$

(c)

y

20.00

15.00

x
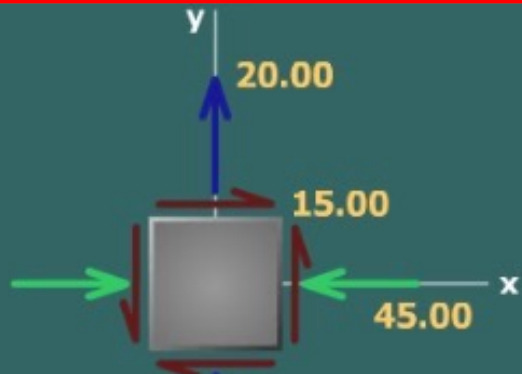
45.00

$\sigma_{ave}=(-45+20)/2 = -12.5$

$\tau_{xy} < 0$
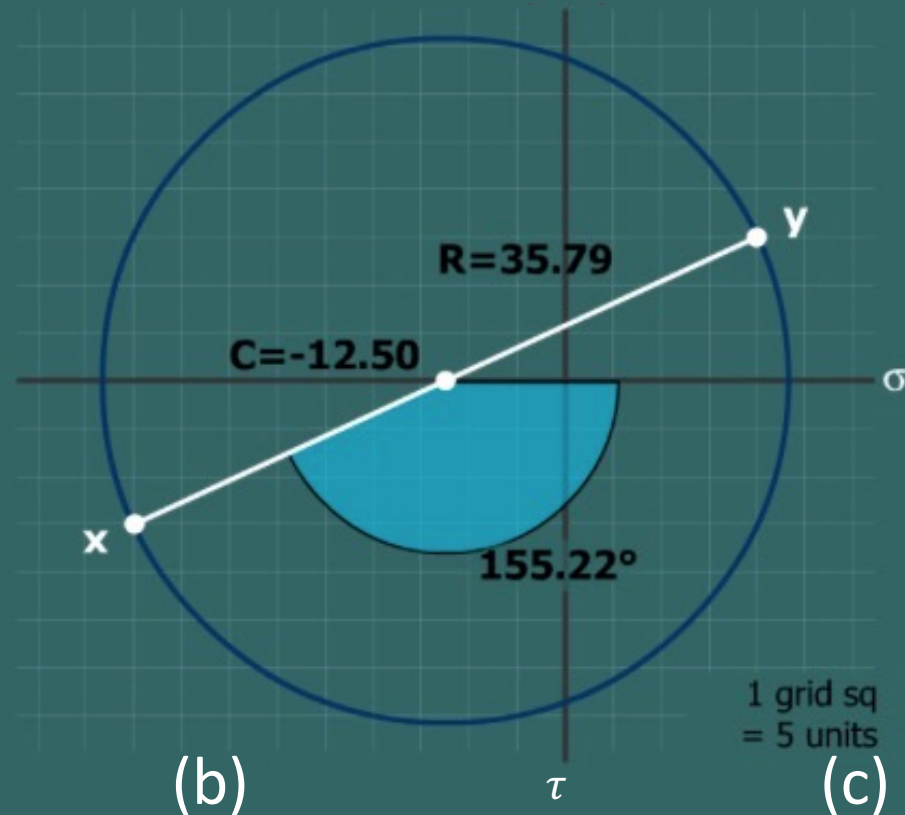
One of the stress elements shown is correct for this Mohr's circle. Click on the correct stress element.
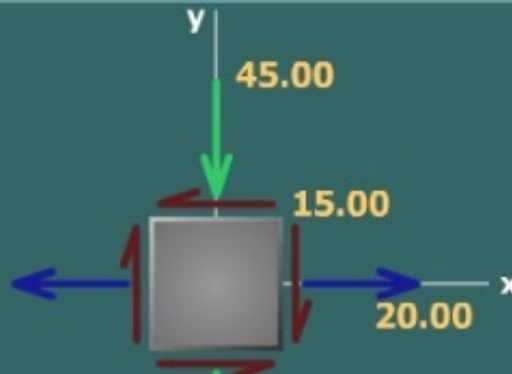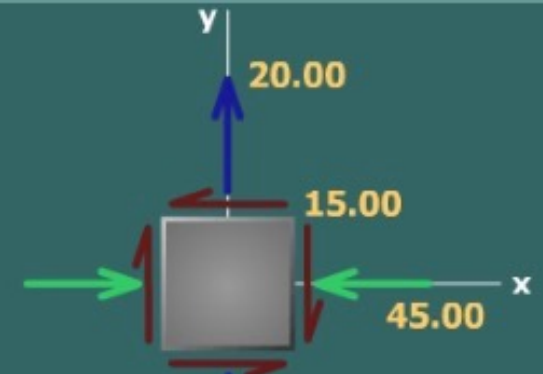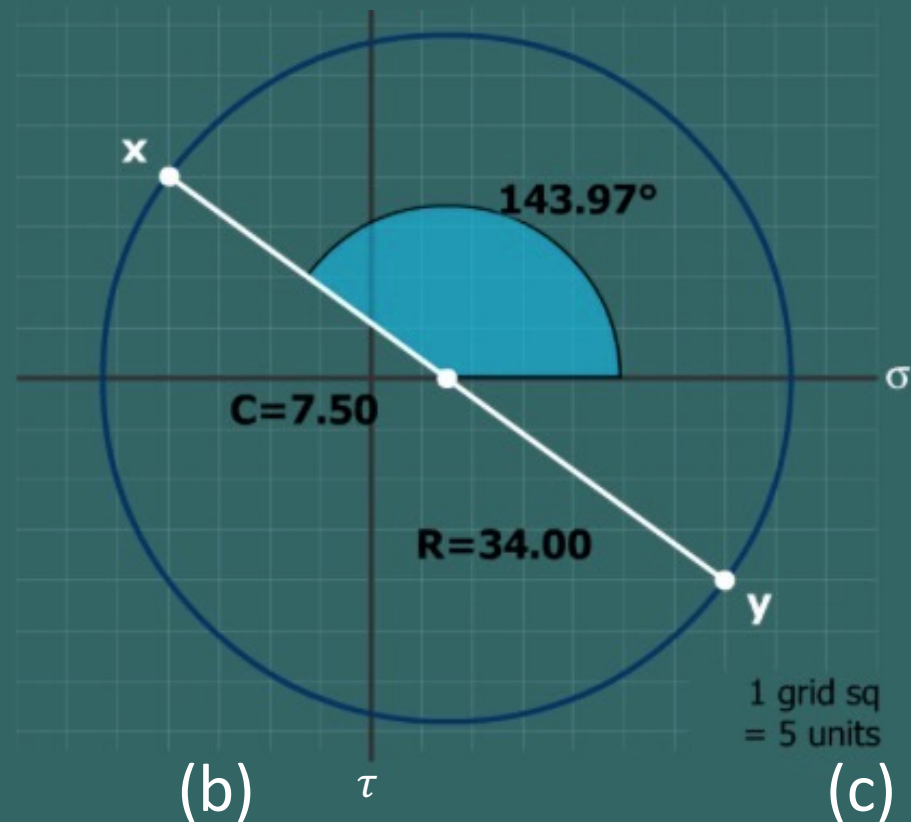
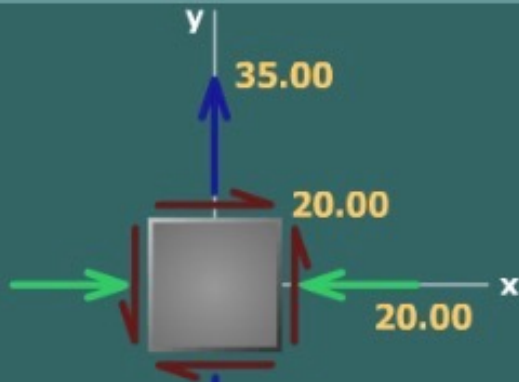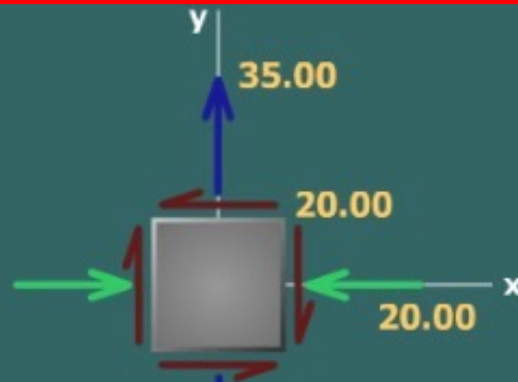*Question Q2.3*

143.97°

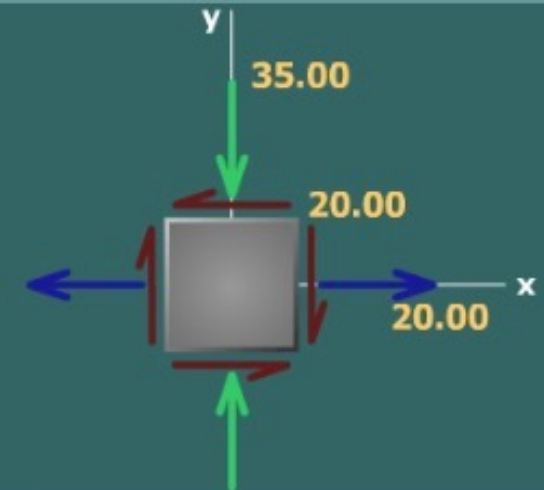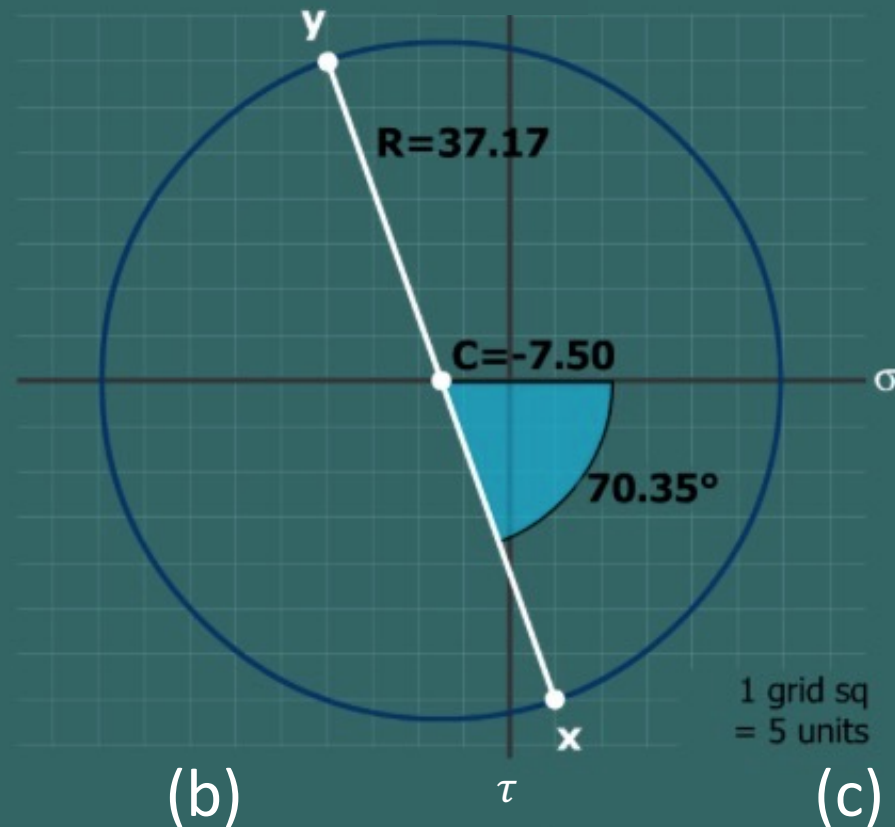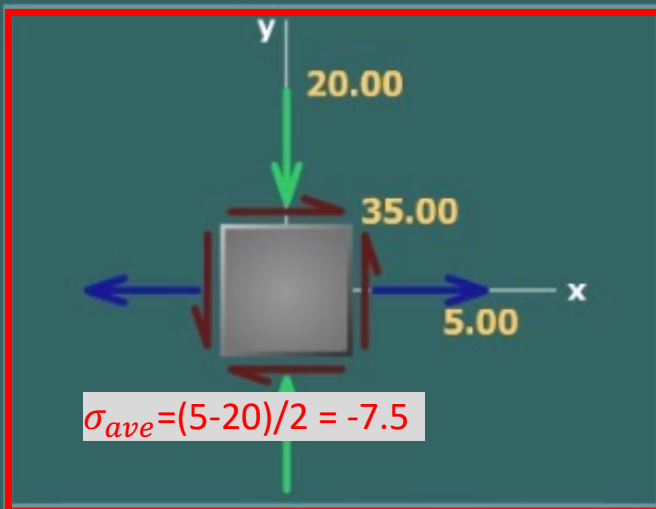C=7.50

R=34.00

σ

1 grid sq = 5 units

τ

(a)

y
35.00
20.00
x
20.00

σ_{ave}=(35-20)/2 = 7.5
$\tau_{xy} > 0$

(b)

y
35.00
20.00
x
20.00

σ_{ave}=(35-20)/2 = 7.5
$\tau_{xy} < 0$

(c)

y
35.00
20.00
x
20.00

One of the stress elements shown is correct for this Mohr's circle. Click on the correct stress element.

R=37.17

C=-7.50

σ

70.35°

1 grid sq = 5 units

x

τ

Question Q2.4

(a)

y

20.00

35.00

5.00

x

$\sigma_{ave} = (5-20)/2 = -7.5$

(b)

y

20.00

35.00

5.00

x

(c)

y

20.00

35.00

5.00

x

One of the stress elements shown is correct for this Mohr's circle. Click on the correct stress element.

147.99°

C=5.00

R=47.17

X

y

σ

τ

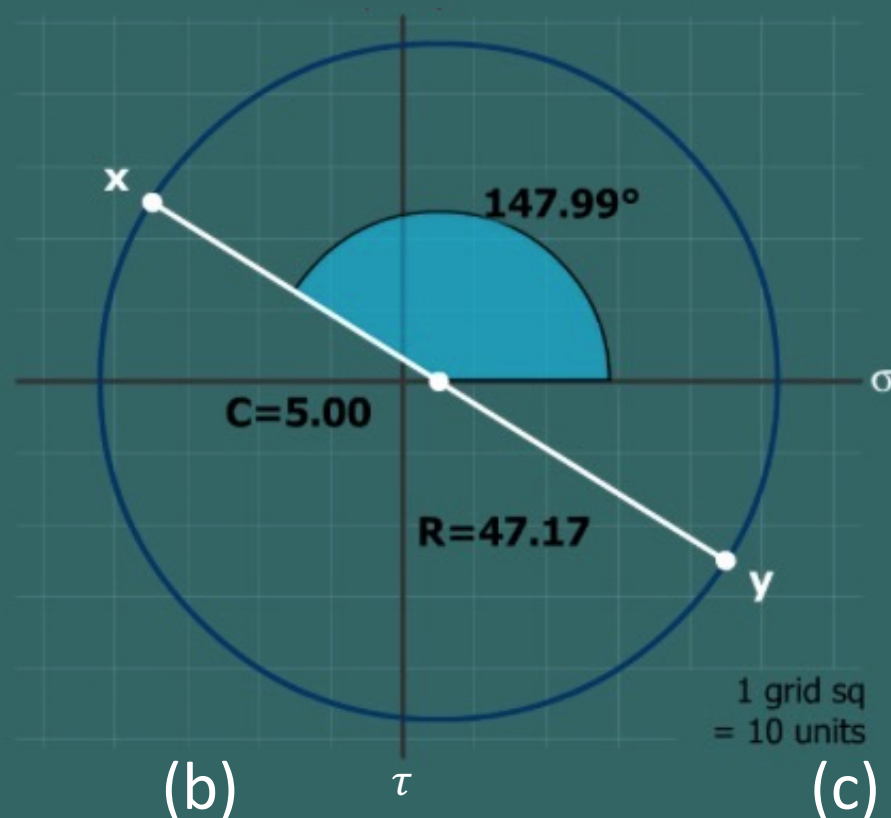1 grid sq = 10 units

Question Q2.5

(a)

y

35.00

25.00

45.00

x

$\sigma_{ave}=(45-35)/2 = 5$
$\tau_{xy} > 0$

(b)

y

45.00

25.00

35.00

x

$\sigma_{ave}=(45-35)/2 = 5$
$\tau_{xy} < 0$

(c)

y

45.00

25.00

35.00

x