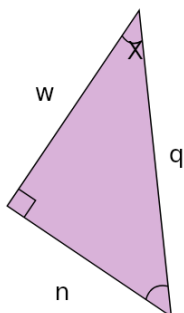


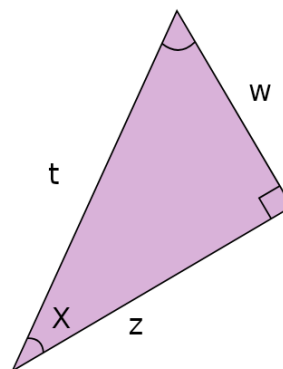
Trigonometry Fundamentals - Advanced

- 1 What would the ratio of opposite over hypotenuse be with respect to angle 'X'?



A	$\frac{w}{q}$	B	$\frac{q}{w}$
C	$\frac{n}{w}$	D	$\frac{n}{q}$
E	$\frac{q}{n}$	F	$\frac{w}{n}$

- 2 What would side w over z be called with respect to angle 'X'?



A	$\frac{\text{hypotenuse}}{\text{adjacent}}$	B	$\frac{\text{adjacent}}{\text{opposite}}$
C	$\frac{\text{opposite}}{\text{adjacent}}$	D	$\frac{\text{opposite}}{\text{hypotenuse}}$
E	$\frac{\text{hypotenuse}}{\text{opposite}}$	F	$\frac{\text{adjacent}}{\text{hypotenuse}}$

- 3 Select the definition of this trigonometry ratio

Sine

A	$adj \times adj$	B	$hyp \times adj$
C	$\frac{opp}{hyp}$	D	$adj \times opp$
E	$\frac{hyp}{hyp}$	F	$\frac{hyp}{adj}$

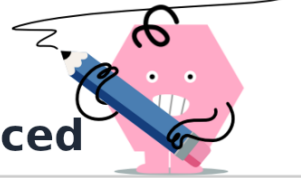
- 4 Select the trigonometry ratio that this is the definition of

$$\frac{adj}{hyp}$$

A	Sine
B	Tangent
C	Cosine

- 5 Calculate the value of this trig ratio
The sin of 80°

A	1.158	B	0.293	C	0.985
D	1.677	E	0.466	F	0.639



Trigonometry Fundamentals - Advanced

- 6 Select the definition of this side in terms of Sine

What is opp?

$$\sin = \frac{\text{opp}}{\text{hyp}}$$

A

$$\sin \times \text{opp}$$

B

$$\frac{\text{adj}}{\sin}$$

C

$$\frac{\sin}{\text{adj}}$$

D

$$\frac{\sin}{\text{hyp}}$$

E

$$\sin \times \text{adj}$$

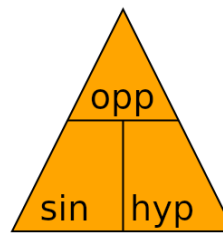
F

$$\sin \times \text{hyp}$$

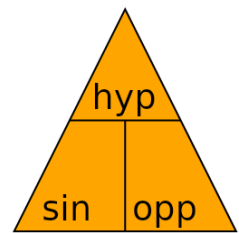
- 7 What fact family triangle would give this trigonometry fact?

$$\sin = \frac{\text{opp}}{\text{hyp}}$$

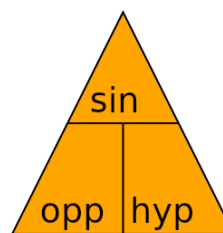
A



B



C



- 8 Select the definition of this side in terms of Tangent

Adjacent

A

$$\frac{\tan}{\text{adj}}$$

B

$$\frac{\text{opp}}{\tan}$$

- 9 Calculate the trigonometric ratio of the given angle (in degrees)

$$\tan(50^\circ) = ?$$

A

0.5

B

1.365

C

1.884

D

1.711

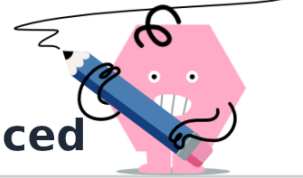
E

0.673

F

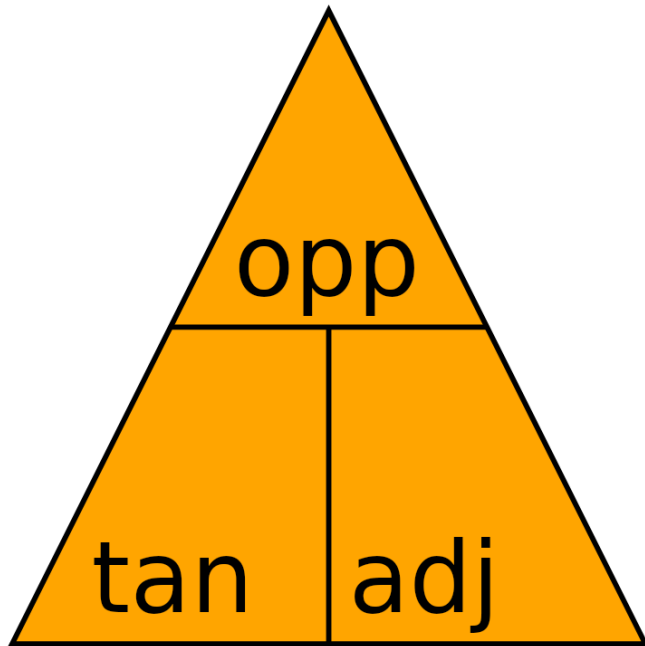
1.192

- 10 Calculate the angle in degrees
 α has a sin of 0.225



Trigonometry Fundamentals - Advanced

11 Which trigonometry fact comes from this fact family



A

$$\tan \cdot \text{adj} = \text{opp}$$

B

$$\tan \cdot \text{opp} = \text{adj}$$

C

$$\text{opp} \cdot \text{adj} = \tan$$

12 Calculate the angle in degrees, given the trigonometric ratio

$$\tan(\alpha) = 0.81$$

13 Calculate the angle in degrees, given the trigonometric ratio

$$\sin^{-1}(0.988) = \alpha$$

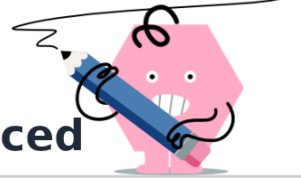
14 Calculate the angle in degrees, given the trigonometric ratio

$$\text{asin}(0.669) = \alpha$$

15 What angle (in degrees) has this ratio of sides?

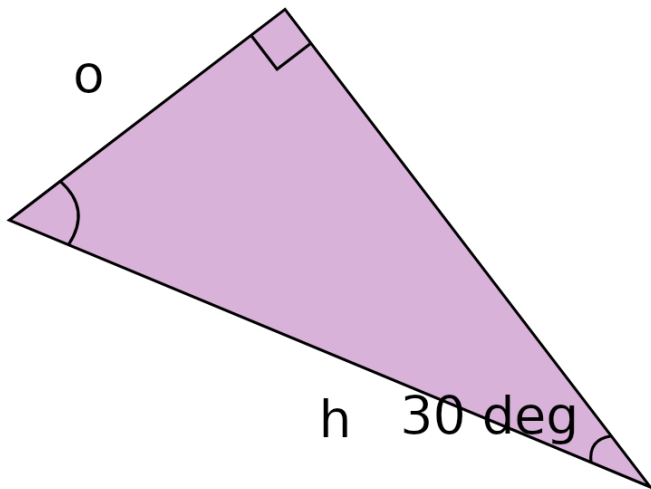
$$\frac{\text{adj}}{\text{hyp}} = \frac{4}{5.22}$$

A	55 deg	B	40 deg
C	45 deg	D	50 deg
E	30 deg	F	60 deg



Trigonometry Fundamentals - Advanced

16 Visually approximate the ratio of side 'o' to side 'h'



A

$$\frac{o}{h} = 0.50$$

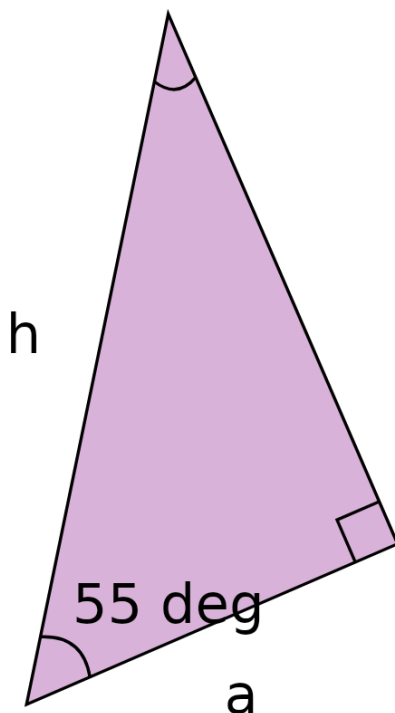
B

$$\frac{h}{a} = 141.21$$

C

$$\frac{o}{h} = 0.93$$

17 Visually approximate the Cosine of the given angle



A

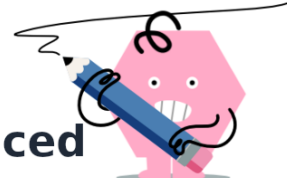
$$\cos(55) = 0.06$$

B

$$\cos(55) = 0.57$$

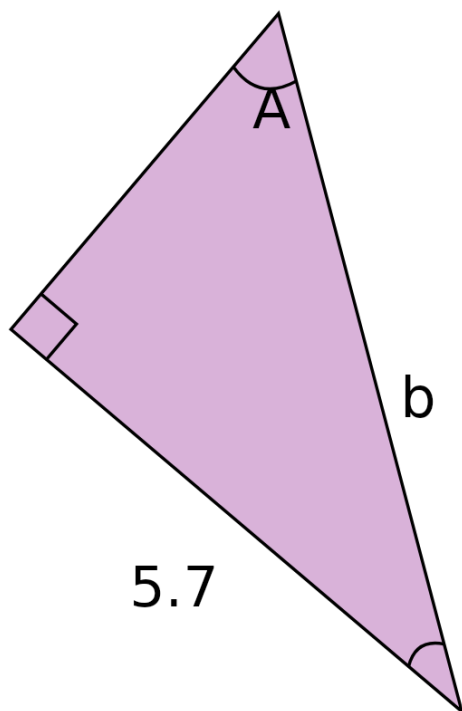
C

$$\cos(55) = 1.08$$



Trigonometry Fundamentals - Advanced

18 Solve for the side length in ratio form



A

$$b = \frac{5.7}{\sin(A)}$$

B

$$b = \frac{\sin(A)}{5.7}$$

19 What angle (in degrees) has this ratio of sides?

$$\frac{\text{opp}}{\text{adj}} = 0.176$$

A	10 deg	B	5 deg
C	25 deg	D	0 deg
E	15 deg	F	20 deg

20 What are the coordinates of the point on the unit circle at $\pi/4$ radians?

$$\frac{\pi}{4} \text{ radians}$$

A

$$\left(\sin\left(\frac{\pi}{4}\right), \cos\left(\frac{\pi}{4}\right)\right)$$

B

$$\left(\cos\left(\frac{\pi}{4}\right), \sin\left(\frac{\pi}{4}\right)\right)$$

21 What are the coordinates of the point on the unit circle at $5\pi/3$ radians?

$$\frac{5\pi}{3} \text{ radians}$$

A

$$\left(\cos\left(\frac{5\pi}{3}\right), \sin\left(\frac{5\pi}{3}\right)\right)$$

B

$$\left(\sin\left(\frac{5\pi}{3}\right), \cos\left(\frac{5\pi}{3}\right)\right)$$

22 What are the coordinates of the point on the unit circle at 360° ?

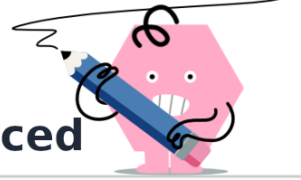
$$360^\circ$$

A

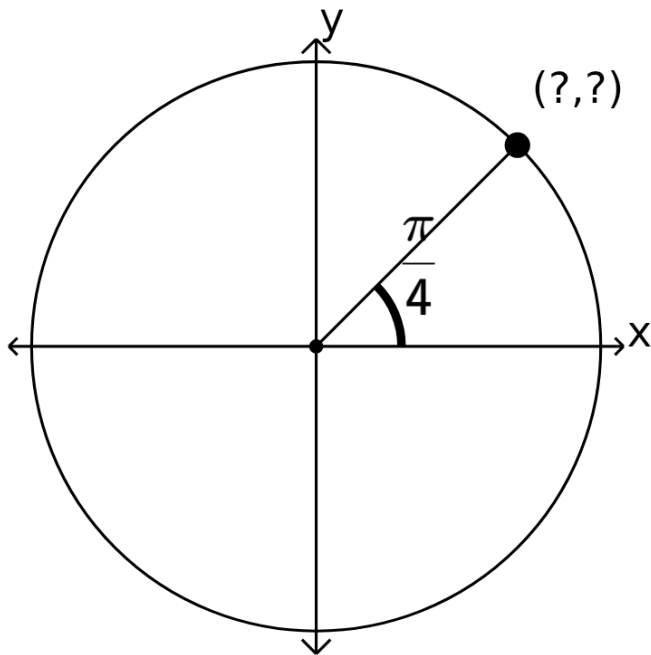
$$\left(\sin(360^\circ), \cos(360^\circ)\right)$$

B

$$\left(\cos(360^\circ), \sin(360^\circ)\right)$$

**Trigonometry Fundamentals - Advanced**

23 What are the coordinates of the unit circle point at $\pi/4$ radians



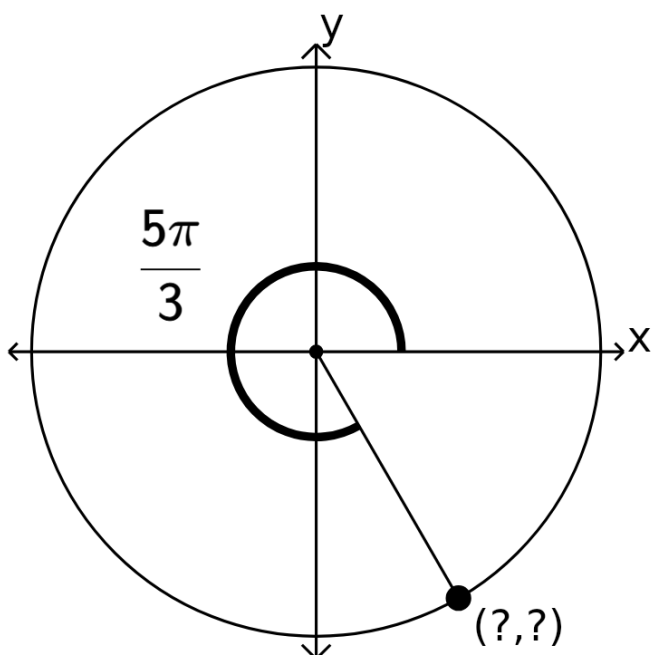
A

$$\left(\cos\left(\frac{\pi}{4}\right), \sin\left(\frac{\pi}{4}\right)\right)$$

B

$$\left(\sin\left(\frac{\pi}{4}\right), \cos\left(\frac{\pi}{4}\right)\right)$$

24 What are the coordinates of the unit circle point at $5\pi/3$ radians

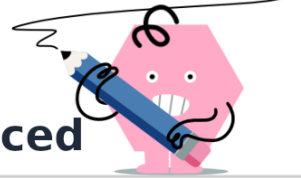


A

$$\left(\sin\left(\frac{5\pi}{3}\right), \cos\left(\frac{5\pi}{3}\right)\right)$$

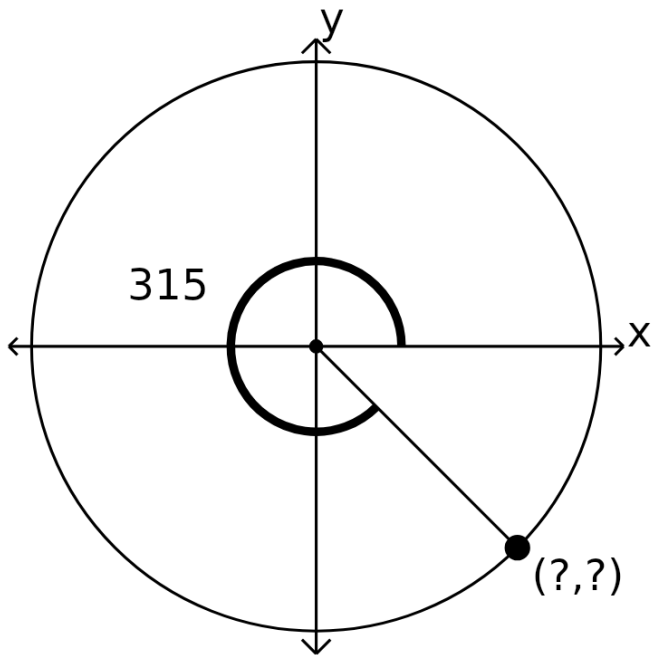
B

$$\left(\cos\left(\frac{5\pi}{3}\right), \sin\left(\frac{5\pi}{3}\right)\right)$$



Trigonometry Fundamentals - Advanced

25 What are the coordinates of the unit circle point at 315°



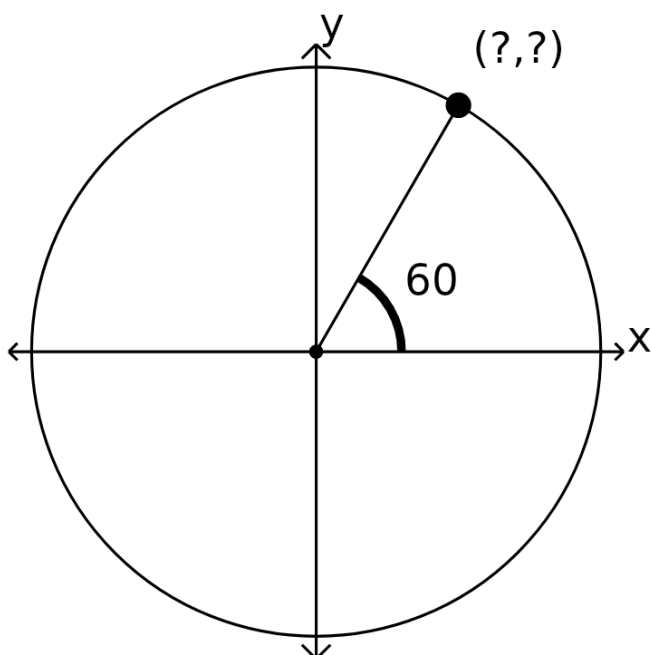
A

$$(\sin(315^\circ), \cos(315^\circ))$$

B

$$(\cos(315^\circ), \sin(315^\circ))$$

26 What are the coordinates of the unit circle point at 60°

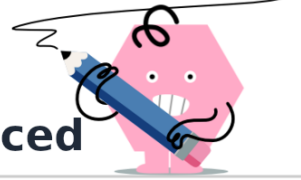


A

$$(\sin(60^\circ), \cos(60^\circ))$$

B

$$(\cos(60^\circ), \sin(60^\circ))$$



Trigonometry Fundamentals - Advanced

27 What are the coordinates of the point on the unit circle at 180° ?

180°

A $(\sin(180^\circ), \cos(180^\circ))$

B $(\cos(180^\circ), \sin(180^\circ))$

28 Solve for the trigonometry ratio given the values

$$\begin{aligned} \text{adj} &= 4 \\ \text{hyp} &= 6.2 \\ \text{opp} &= 4.8 \\ \cos(\mu) &= \end{aligned}$$

A $\cos(\mu) = 0.42$

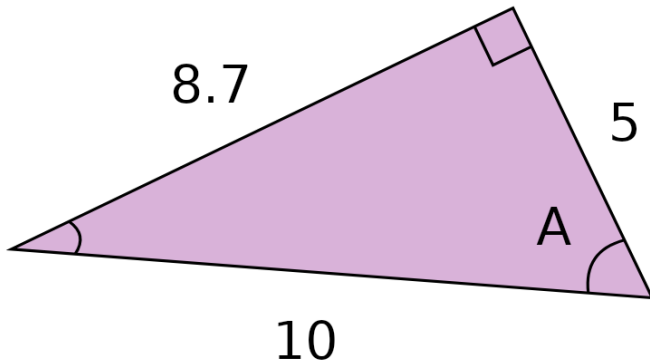
B $\cos(\mu) = 16.81$

C $\cos(\mu) = 0.33$

D $\cos(\mu) = 0.65$

E $\cos(\mu) = 29.07$

29 Solve for the trigonometric ratio in fraction form



A $\sin(A) = \frac{8.7}{10}$

B $\sin(A) = \frac{10}{8.7}$

C $\sin(A) = 10 \times 5$

30 Solve for the angle in degrees given the values

$$\begin{aligned} \text{opp} &= 3.5 \\ \text{adj} &= 5 \\ \lambda &=?^\circ \end{aligned}$$

A $\lambda = 40^\circ$

B $\lambda = 20^\circ$

C $\lambda = 50^\circ$

D $\lambda = 35^\circ$

E $\lambda = 45^\circ$

31 Solve for the side indicated

$$\begin{aligned} \beta &= 40^\circ \\ \text{opp} &= 8.4 \\ \text{adj} &=? \end{aligned}$$

A $\text{adj} = 14.0$

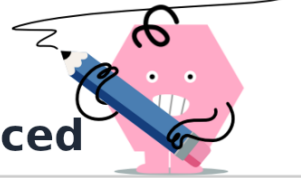
B $\text{adj} = 13.0$

C $\text{adj} = 10.0$

D $\text{adj} = 8.0$

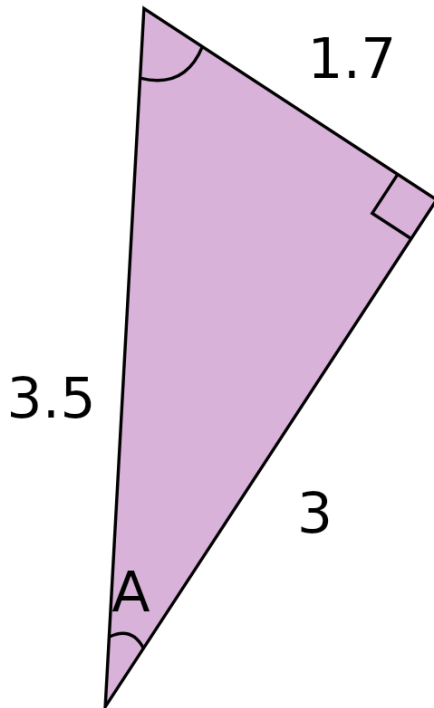
E $\text{adj} = 9.0$

F $\text{adj} = 7.0$



Trigonometry Fundamentals - Advanced

32 Solve for the trigonometric ratio in decimal form



A

$$\cos(A) = 0.86$$

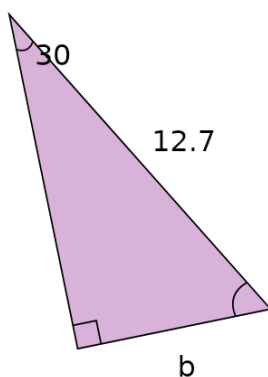
B

$$\cos(A) = 1.28$$

C

$$\cos(A) = 1.60$$

33 Solve for the side length in decimal form by calculating the trigonometric ratio



A $b = \frac{12.7}{0.50}$

B $b = \frac{0.50}{12.7}$

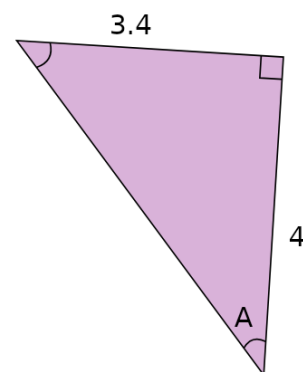
C $b = 0.50 \times 6.4$

D $b = 0.50 \times 12.7$

E $b = \frac{0.50}{11}$

F $b = \frac{11}{0.50}$

34 Solve for the angle in degrees with trigonometry



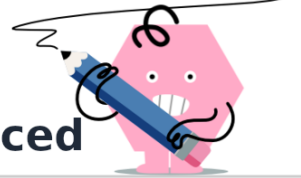
A $A = 25^\circ$

B $A = 35^\circ$

C $A = 45^\circ$

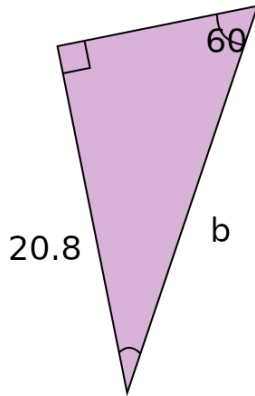
D $A = 50^\circ$

E $A = 40^\circ$



Trigonometry Fundamentals - Advanced

35 Solve for the side length with trigonometry



- | | |
|--------------|--------------|
| A $b = 14.4$ | B $b = 28.8$ |
| C $b = 24.0$ | D $b = 26.4$ |
| E $b = 31.2$ | F $b = 33.6$ |

36 How many radians is this angle ($180^\circ = \pi$ radians)?

270°

A

$$\frac{3\pi}{2} \text{ rad}$$

B

$$\frac{5\pi}{4} \text{ rad}$$

37 How many radians is this angle ($180^\circ = \pi$ radians)?

180°

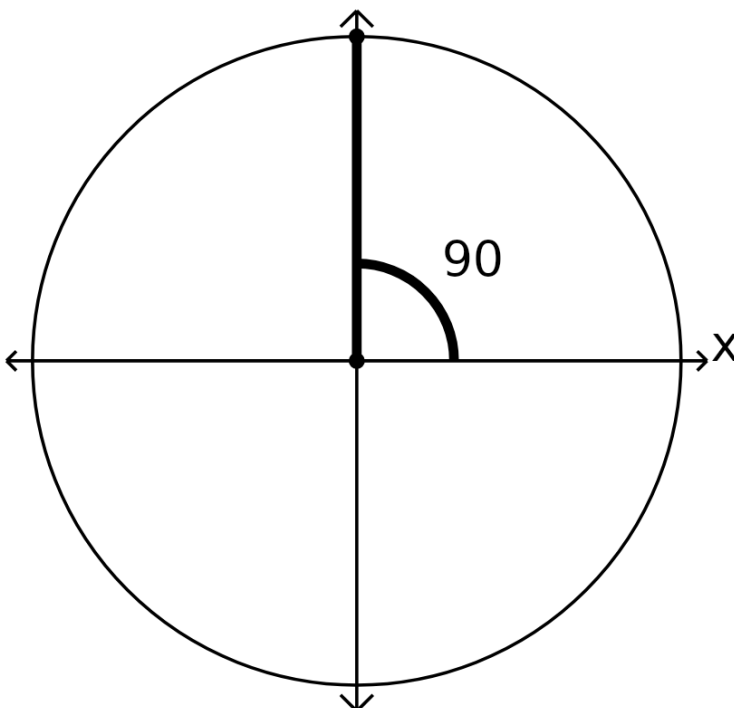
A

$$\frac{5\pi}{6} \text{ rad}$$

B

$$\pi \text{ rad}$$

38 How many radians is this angle ($180^\circ = \pi$ radians)?

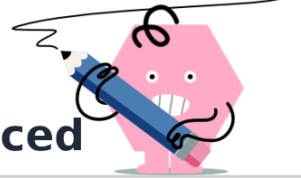


A

$$\frac{3\pi}{4} \text{ rad}$$

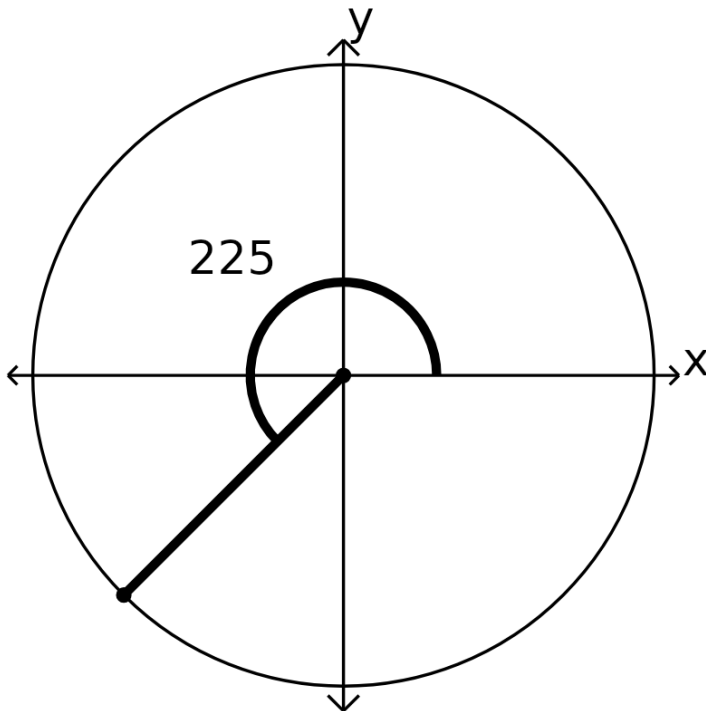
B

$$\frac{\pi}{2} \text{ rad}$$



Trigonometry Fundamentals - Advanced

39 How many radians is this angle ($180^\circ = \pi$ radians)?



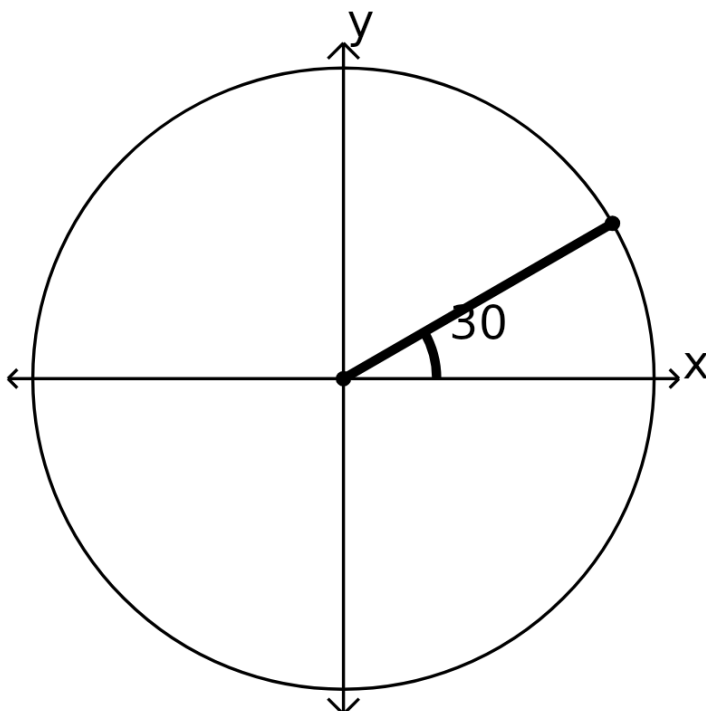
A

$$\frac{5\pi}{4} \text{ rad}$$

B

$$\frac{7\pi}{6} \text{ rad}$$

40 How many radians is this angle ($180^\circ = \pi$ radians)?

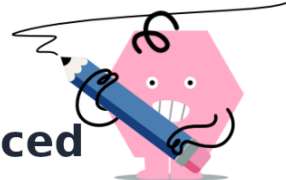


A

$$\frac{\pi}{6} \text{ rad}$$

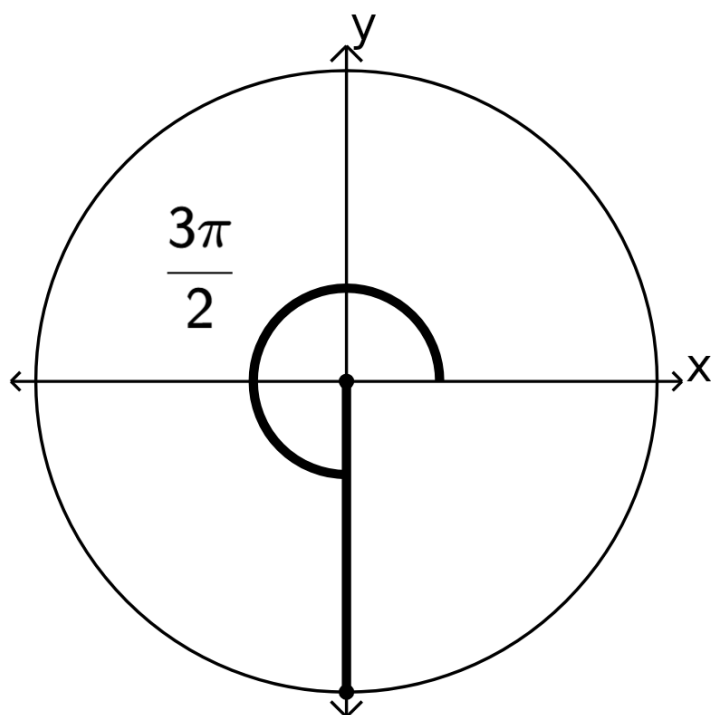
B

$$\frac{\pi}{2} \text{ rad}$$



Trigonometry Fundamentals - Advanced

41 How many degrees is this angle ($180^\circ = \pi$ radians)?



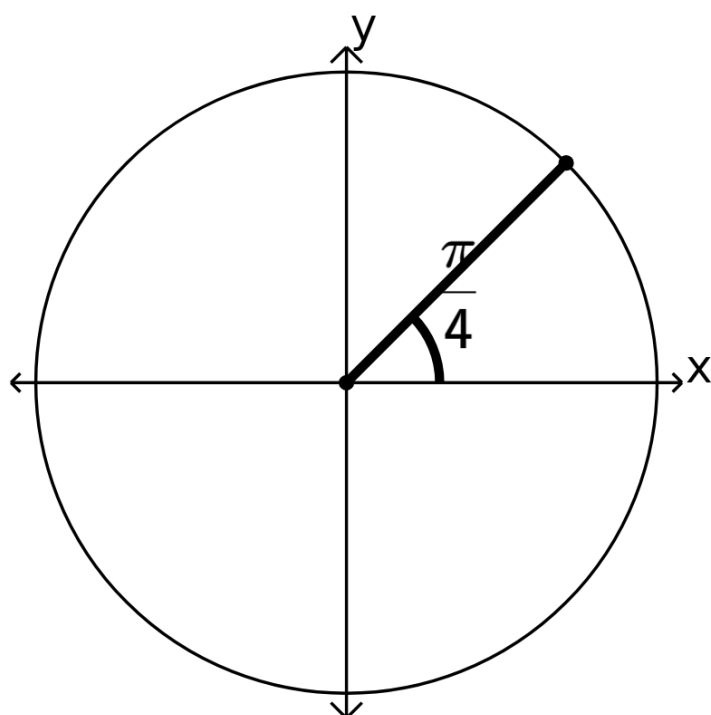
A

210°

B

270°

42 How many degrees is this angle ($180^\circ = \pi$ radians)?

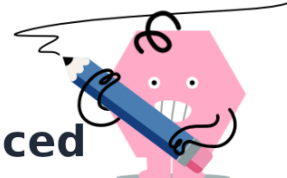


A

45°

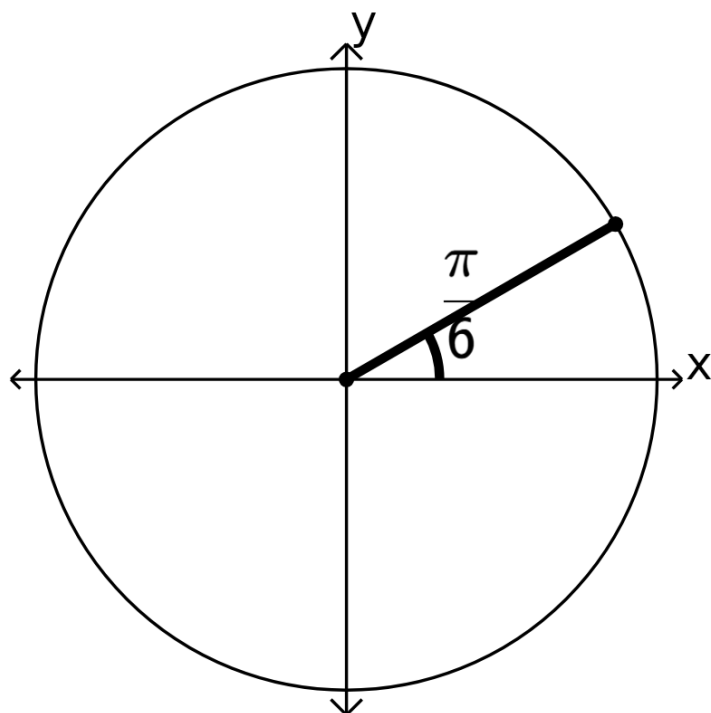
B

60°



Trigonometry Fundamentals - Advanced

43 How many degrees is this angle ($180^\circ = \pi$ radians)?



A

135°

B

30°

44 How many radians is this angle ($180^\circ = \pi$ radians)?

150°

A

 $\frac{5\pi}{6}$ rad

B

 $\frac{2\pi}{3}$ rad

45 How many radians is this angle ($180^\circ = \pi$ radians)?

0 rad

A

60°

B

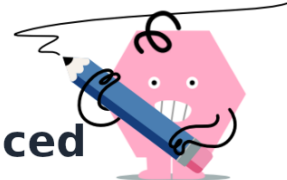
0°

46 How many radians is this angle ($180^\circ = \pi$ radians)?

 $\frac{3\pi}{4}$ rad**180°****135°**

47 How many radians is this angle ($180^\circ = \pi$ radians)?

 $\frac{5\pi}{3}$ rad**315°****300°**



Trigonometry Fundamentals - Advanced

48 Select the reciprocal of this trigonometry ratio
 $\cot$

A

$$\frac{1}{\tan}$$

B

$$\frac{1}{\csc}$$

49 Select the trigonometry ratio for this reciprocal

$$\frac{1}{\csc}$$

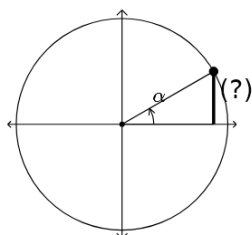
A

$$\tan$$

B

$$\sin$$

50 What is the Y dimension for the unit circle point shown?



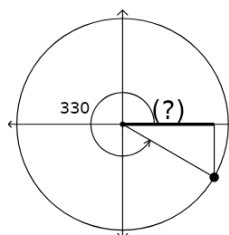
A

$$\sin(\alpha)$$

B

$$\cos(\alpha)$$

51 What is the X dimension for the unit circle point at 330° ?



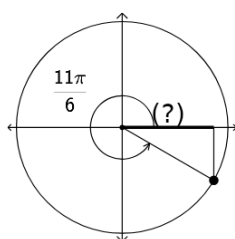
A

$$\cos(330^\circ)$$

B

$$\sin(330^\circ)$$

52 What is the X dimension for the unit circle point at $11\pi/6$ radians?

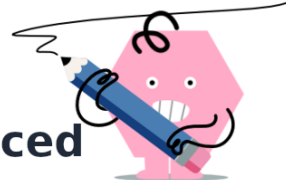


A

$$\cos\left(\frac{11\pi}{6}\right)$$

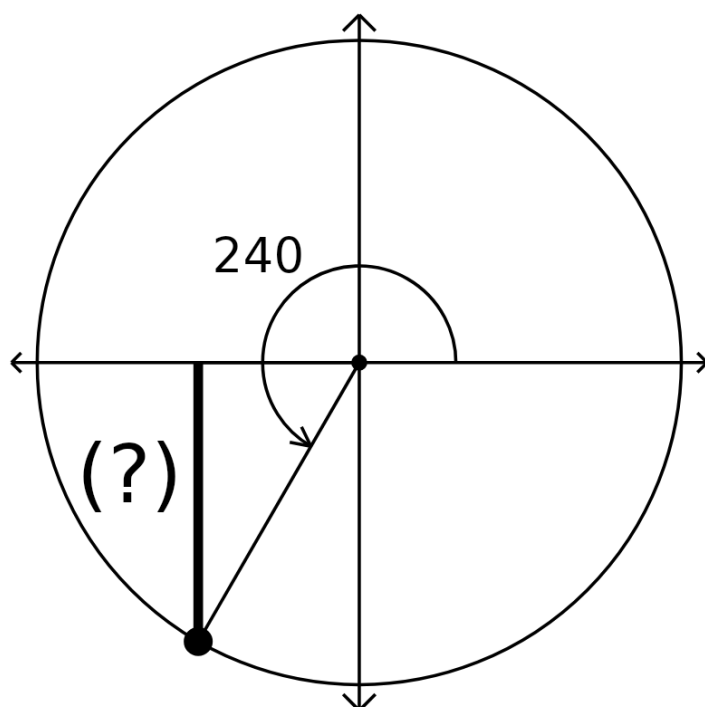
B

$$\sin\left(\frac{11\pi}{6}\right)$$



Trigonometry Fundamentals - Advanced

53 What is the Y dimension for the unit circle point at 240° ?



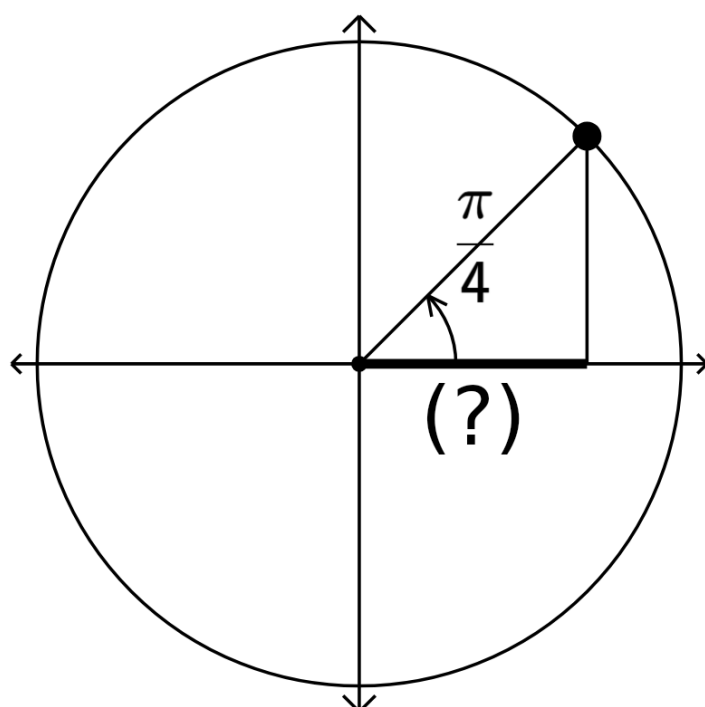
A

$$\frac{1}{2}$$

B

$$-\frac{\sqrt{3}}{2}$$

54 What is the X dimension for the unit circle point at $\pi/4$ radians?



A

$$\frac{\sqrt{2}}{2}$$

B

$$-\frac{\sqrt{2}}{2}$$