1. *Chapter 4, Section 4.1, Question 006

Find the points where the line through the origin with slope 10 intersects the unit circle.

a. Only $\left(-\frac{\sqrt{101}}{101}, -\frac{10\sqrt{101}}{101}\right)$

b. $\left(\frac{\sqrt{101}}{101}, -\frac{10\sqrt{101}}{101}\right)$ and $\left(-\frac{\sqrt{101}}{101}, \frac{10\sqrt{101}}{101}\right)$

c. Only $\left(\frac{\sqrt{101}}{101}, \frac{10\sqrt{101}}{101}\right)$

d. $\left(\frac{\sqrt{101}}{101}, \frac{10\sqrt{101}}{101}\right)$ and $\left(-\frac{\sqrt{101}}{101}, -\frac{10\sqrt{101}}{101}\right)$

e. $\left(\frac{10\sqrt{101}}{101}, \frac{\sqrt{101}}{101}\right)$ and $\left(-\frac{10\sqrt{101}}{101}, -\frac{\sqrt{101}}{101}\right)$

Answer: d

2. *Chapter 4, Section 4.1, Question 004

Find all numbers t such that $\left(t, -\frac{7}{19}\right)$ is a point on the unit circle.

Enter the exact, simplified answers in increasing order.

$t =$

$t =$

3. *Chapter 4, Section 4.1, Question 030

What angle corresponds to a circular arc on the unit circle with length 3 ?

Round your answer to one decimal place.

$\theta =$ **171.9** *1 °

Significant digits not applicable; the absolute tolerance is +/-0.1

4. Chapter 4, Section 4.1, Question 033

Find the lengths of both circular arcs on the unit circle connecting the points $(1,0)$ and $\left(\frac{\sqrt{2}}{2}, -\frac{\sqrt{2}}{2}\right)$.

Enter the exact answers. Enter your answers in increasing order.

Length of one arc=

Length of the other arc=

5. *Chapter 4, Section 4.1, Question 036

Find the endpoint of the radius of the unit circle that makes a 960° angle with the positive horizontal axis.

Enter the exact answer.

6. Chapter 4, Section 4.1, Question 041

For the given point find the angle the radius of the unit circle ending at that point makes with the positive horizontal axis. Among the infinite number of possible correct solutions, choose the one with the smallest absolute value.

$$\left(-\frac{1}{2}, \frac{\sqrt{3}}{2}\right)$$

120 *1 °

Significant digits not applicable; exact number, no tolerance

7. *Chapter 4, Section 4.1, Question 047

Find the lengths of both circular arcs on the unit circle connecting the point $\left(\frac{1}{2}, \frac{\sqrt{3}}{2}\right)$ and the point that makes an angle of $145°$ with the positive horizontal axis.

Enter the exact, simplified answers in increasing order.

Length of one arc=

Length of the other arc=

8. *Chapter 4, Section 4.2, Question 003

Convert -36° to radians.

Enter the exact answer in terms of π.

$-36° =$ radians

9. *Chapter 4, Section 4.2, Question 006

Convert $340°$ to radians.

Enter the exact answer in terms of π.

$340° =$ radians

10. *Chapter 4, Section 4.2, Question 014

Convert 6 radians to degrees.

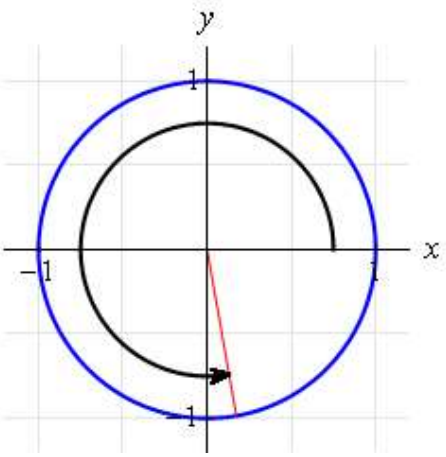
Enter the exact answer in terms of π.

6radians = °

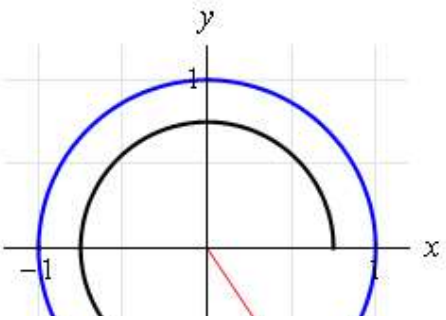
11. *Chapter 4, Section 4.2, Question 020

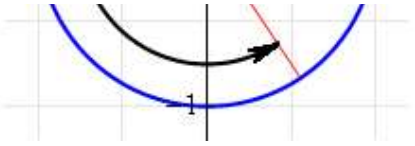
Sketch the unit circle and the radius corresponding to the angle 5.3 radians. Include an arrow to show the direction in which the angle is measured from the positive horizontal axis. Choose the correct answer.

a.

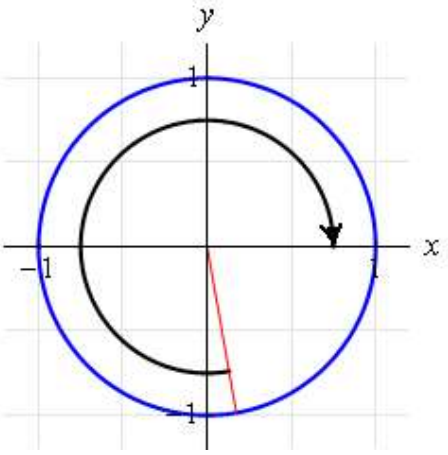


b.

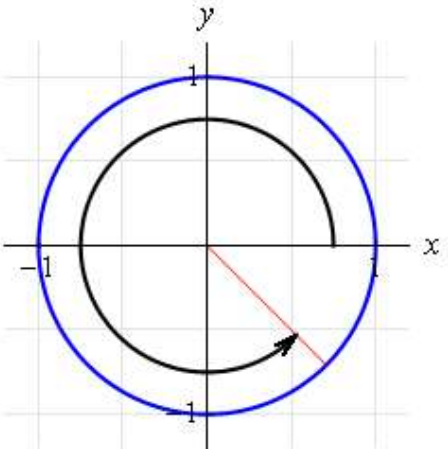




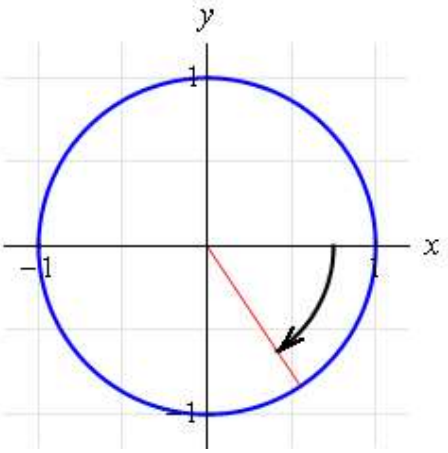
c.



d.



e.



Answer: b

12. *Chapter 4, Section 4.2, Question 027

Find the lengths of both circular arcs of the unit circle connecting the point $(1,0)$ and the endpoint of the radius that makes an angle of 2.94 radians with the positive horizontal axis.

Round your answers to two decimal places. Enter the answers in increasing order.

Length of one arc = **2.94** *1

Length of other arc = **3.34** *2

*1 - *significant digits not applicable; the absolute tolerance is +/-0.01*
*2 - *significant digits not applicable; the absolute tolerance is +/-0.01*

13. *Chapter 4, Section 4.2, Question 034

Suppose a slice of a 10 -inch pizza has an area of 10 square inches. What is the angle of this slice?

Enter the exact answer.

Angle of the slice =

radians

14. Chapter 4, Section 4.3, Question 002

Give exact values for the given quantities.

Do not use a calculator for any of these exercises, otherwise you will likely get decimal

approximations for some solutions rather than exact answers. More importantly, good understanding will come from working these exercises by hand.

(a) $\cos\left(-\frac{3\pi}{2}\right) =$

(b) $\sin\left(-\frac{3\pi}{2}\right) =$

15. Chapter 4, Section 4.3, Question 006

Give exact values for the given quantities.

Do not use a calculator for any of these exercises, otherwise you will likely get decimal approximations for some solutions rather than exact answers. More importantly, good understanding will come from working these exercises by hand.

(a) $\cos\frac{4\pi}{3} =$

(b) $\sin\frac{4\pi}{3} =$

16. *Chapter 4, Section 4.3, Question 009

Give exact values for the given quantities.

Do not use a calculator for any of these exercises, otherwise you will likely get decimal approximations for some solutions rather than exact answers. More importantly, good understanding will come from working these exercises by hand.

(a) $\cos 360000045^\circ =$

(b) $\sin 360000045^\circ =$

17. Chapter 4, Section 4.3, Question 015

Find the four smallest positive numbers θ such that $\sin\theta = 1$.

Enter the exact answers in increasing order in radians.

$\theta =$

$\theta =$

$\theta =$

$\theta =$

18. Chapter 4, Section 4.3, Question 017

Find the four smallest positive numbers θ such that $\cos\theta = -1$.

Enter the exact answers in increasing order in radians.

$\theta =$

$\theta =$

$\theta =$

$\theta =$

19. *Chapter 4, Section 4.3, Question 022

Suppose $0 < \theta < \frac{\pi}{2}$ and Evaluate .

Enter the exact answer in fraction form.

20. *Chapter 4, Section 4.3, Question 028

Find the smallest number such that .

Enter the exact answer in terms of elementary functions.

21. *Chapter 4, Section 4.3, Question 034

(a) Sketch a radius of the unit circle corresponding to an angle such that

Sketch 1	Sketch 2	Sketch 3

Choose the correct sketch number from the table above:

3 ▼

(b) Sketch another radius, different from the one in part (a), also illustrating

Sketch 1	Sketch 2	Sketch 3

Choose the correct sketch number from the table above:

2 ▼