

## تجميعة أسئلة صفحات الكتاب وفق الهيكل الوزاري حسب منهج ريفيل



تم تحميل هذا الملف من موقع المناهج الإماراتية

موقع المناهج ← المناهج الإماراتية ← الصف الحادي عشر العام ← رياضيات ← الفصل الثالث ← ملفات متنوعة ← الملف

تاريخ إضافة الملف على موقع المناهج: 2025-05-18 17:15:02

ملفات اكتب للمعلم اكتب للطالب الاختبارات الكترونية الاختبارات ا حلول ا عروض بوربوينت ا أوراق عمل  
منهج انجليزي ا ملخصات وتقارير ا مذكرات وبنوك الامتحان النهائي للمدرس

المزيد من مادة  
رياضيات:

التواصل الاجتماعي بحسب الصف الحادي عشر العام



صفحة المناهج  
الإماراتية على  
فيسبوك

الرياضيات

اللغة الانجليزية

اللغة العربية

التربية الاسلامية

المواد على تلغرام

المزيد من الملفات بحسب الصف الحادي عشر العام والمادة رياضيات في الفصل الثالث

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وزارة التربية والتعليم  
MINISTRY OF EDUCATION

وزارة التربية و التعليم

مدرسة زايد الثاني للتعليم الثانوي

للفصل الحادي عشر العام

للفصل الدراسي الثالث

العام الدراسي 2024 - 2025

هيكل مادة الرياضيات

## الأسئلة الموضوعية - MCQ

1	Classify sampling methods a bias in samples and survey questions	Exercises (4-10)	P375
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- Identify each sample or question as biased or unbiased. Explain your reasoning.
4. A random sample of eight people is asked to select their favorite food for a survey about Americans' food preferences.
  5. Every tenth student at band camp is asked to name his or her favorite band for a survey about the campers.
  6. Every fifth person entering a museum is asked to name his or her favorite type of book to read for a survey about reading interests of people in the city.
  7. Do you think that the workout facility needs a new treadmill and racquetball court?
  8. Which is your favorite type of music, pop, or country?
  9. Are you a member of any after-school clubs?
  10. Don't you agree that employees should pack their lunch?

2	Classify and determine study types	Example 4	P373
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A research team wants to test new football uniform designs and their appeal to young adults.

They randomly select 100 young adults to view the different uniforms.

The research team observes and records the reactions to the uniforms.

**Step 1** What is the purpose of the study?

The purpose is to determine if the new uniforms will be appealing to young adults.

**Step 2** Does this situation represent a survey, an experiment, or an observational study?

This is a(n) observational study because the participants are observed without being affected by the study.

**Step 3** Identify the sample and population. The sample is the 100 young adults involved in the study. The population is all young adults.

### Example 1 Classify Random Variables

Classify each random variable as discrete or continuous.

A. the number of songs on a random selection of smartphones

The number of songs on a random selection of smartphones is discrete because the number of songs is countable.

B. the air pressure in a random selection of basketballs

Air pressure is continuous because it can take on any value within a certain range. The air pressure of a standard basketball can be anywhere between 7.5 and 8.5 pounds per square inch.

4	Analyze standardized data and distributions by using z-values.	Exercises (8-10)	P401
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MCQ - الأسئلة الموضوعية

Find the z-value for each standard normal distribution.

8.  $\sigma = 9.8$ ,  $X = 55.4$ , and  $\mu = 68.34$



4	Analyze standardized data and distributions by using z-values.	Exercises (8-10)	P401
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الأسئلة الموضوعية - MCQ

Find the z-value for each standard normal distribution.

9.  $\sigma = 11.6$ ,  $X = 42.80$ , and  $\mu = 68.2$



4	Analyze standardized data and distributions by using z-values.	Exercises (8-10)	P401
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MCQ - الأسئلة الموضوعية

Find the z-value for each standard normal distribution.

10.  $\sigma = 11.9$ ,  $X = 119.2$ , and  $\mu = 112.4$



5	Analyze normally distributed variables by using the Empirical Rule.	Exercises (7)	P401
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7. A normal distribution has a mean of 186.4 and a standard deviation of 48.9.

a. What range of values represents the middle 99.7% of the data?

b. What percent of data will be greater than 235.3?

c. What range of values represents the upper 2.5% of the data?

6	Draw angles in standard position and identify coterminal angles.	Exercises (16-33)	P421
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Find an angle with a positive measure and an angle with a negative measure that are coterminal with each angle.

16.  $65^\circ$

17.  $-75^\circ$

18.  $230^\circ$

19.  $45^\circ$

20.  $60^\circ$

21.  $370^\circ$



6	Draw angles in standard position and identify coterminal angles.	Exercises (16-33)	P421
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Find an angle with a positive measure and an angle with a negative measure that are coterminal with each angle.

22.  $-90^\circ$

23.  $420^\circ$

24.  $30^\circ$

25.  $55^\circ$

26.  $80^\circ$

27.  $110^\circ$



6	Draw angles in standard position and identify coterminal angles.	Exercises (16-33)	P421
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Find an angle with a positive measure and an angle with a negative measure that are coterminal with each angle.

28.  $\frac{2\pi}{5}$

29.  $\frac{5\pi}{6}$

30.  $-\frac{3\pi}{2}$

31.  $\frac{2\pi}{3}$

2023 32.  $\frac{5\pi}{2}$

2024 33.  $-\frac{3\pi}{4}$



7	Convert between degree and radian measures and find arc lengths by using central angles	Example 6	P420
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A traffic circle, or roundabout, is a circular roadway at the intersection of two or more streets that allows cars to travel through more continuously than a traffic light or stop sign.

The diameter of a traffic circle is 160 feet.

How far does a car travel in the roundabout if it goes three-fourths of the way around?

Step 1 Find the central angle in radians.

$$\theta = \frac{3}{4} \cdot 2\pi \text{ or } \frac{3\pi}{2}$$

The angle is  $\frac{3}{4}$  of a rotation.

Step 2 Find the arc length.

$$\begin{aligned} s &= r\theta \\ &= 80 \cdot \frac{3\pi}{2} \\ &= 120\pi \\ &\approx 376.99 \end{aligned}$$

Formula for arc length  
 $r = 0.5d = 0.5(160)$  or 80 and  $\theta = \frac{3\pi}{2}$   
 Multiply.  
 Use a calculator.

A car that travels three-fourths of the way around the traffic circle will travel about 377 feet.

8	Find values of trigonometric ratios by using reference angles.	Exercises (28-39)	P432
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Sketch each angle. Then find the measure of each reference angle.

28.  $\frac{31\pi}{36}$

29.  $230^\circ$



8	Find values of trigonometric ratios by using reference angles.	Exercises (28-39)	P432
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Sketch each angle. Then find the measure of each reference angle.

30.  $205^\circ$

31.  $\frac{4\pi}{3}$



8	Find values of trigonometric ratios by using reference angles.	Exercises (28-39)	P432
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Sketch each angle. Then find the measure of each reference angle.

32.  $-\frac{\pi}{6}$

33.  $\frac{7\pi}{4}$



8	Find values of trigonometric ratios by using reference angles.	Exercises (28-39)	P432
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Sketch each angle. Then find the measure of each reference angle.

33.  $\frac{7\pi}{4}$

34.  $135^\circ$



8	Find values of trigonometric ratios by using reference angles.	Exercises (28-39)	P432
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Sketch each angle. Then find the measure of each reference angle.

35.  $200^\circ$

36.  $\frac{5\pi}{3}$



8	Find values of trigonometric ratios by using reference angles.	Exercises (28-39)	P432
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Sketch each angle. Then find the measure of each reference angle.

38.  $-210^\circ$

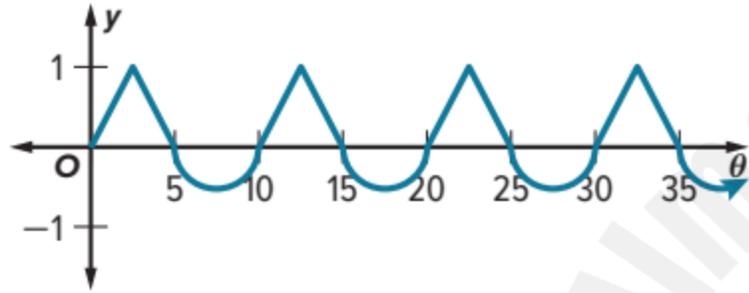
39.  $-\frac{7\pi}{4}$



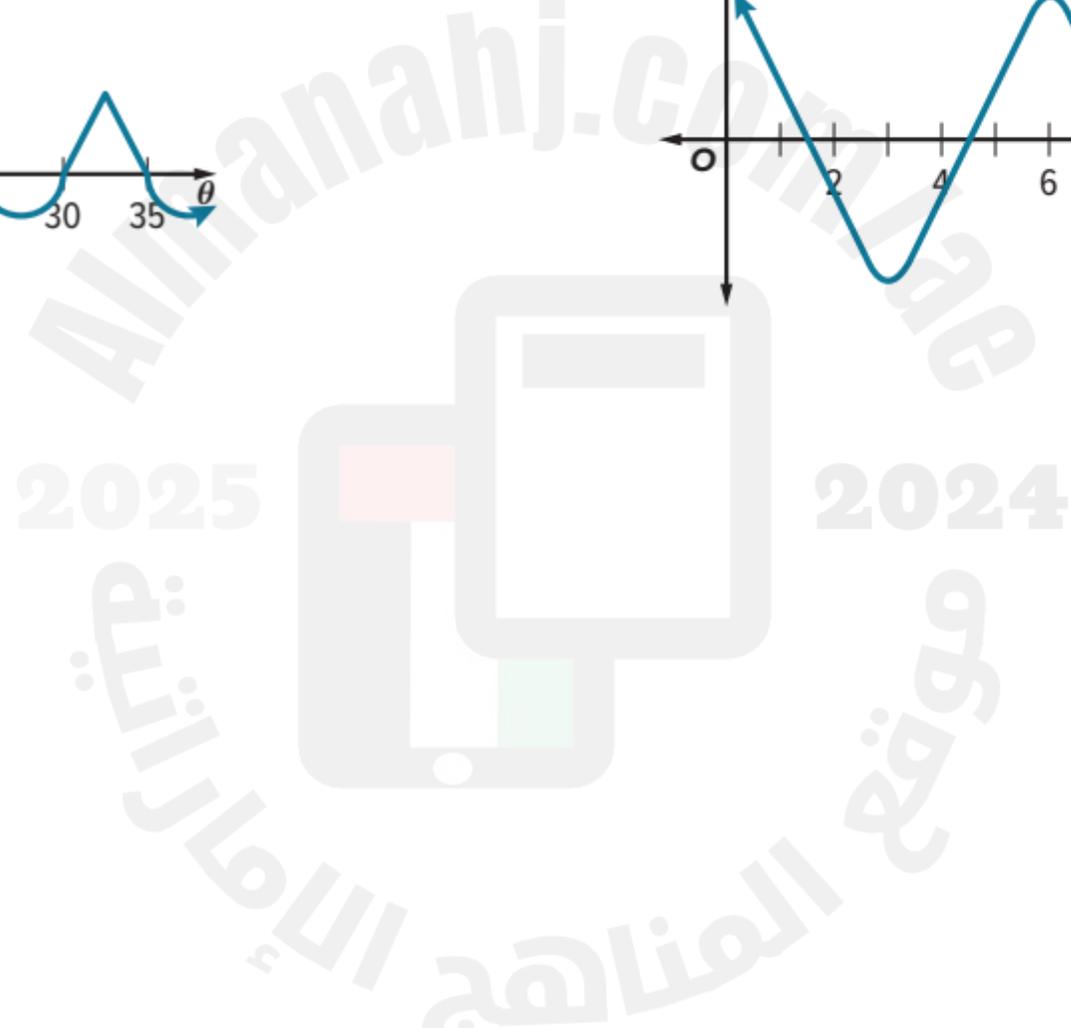
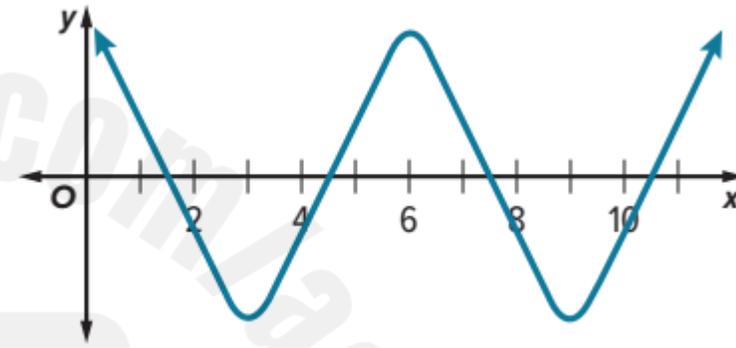
9	Find values of trigonometric functions that model periodic events..	Exercises (13-18)	P441
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Determine the period of the function.

13.



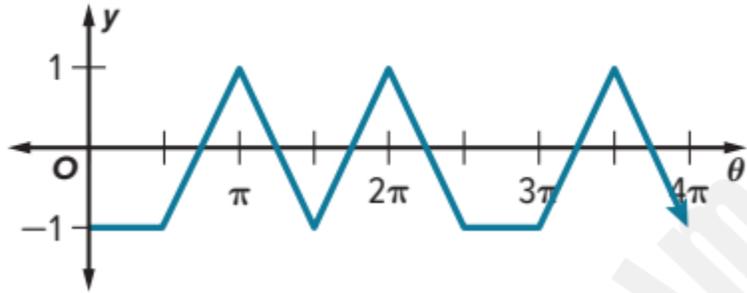
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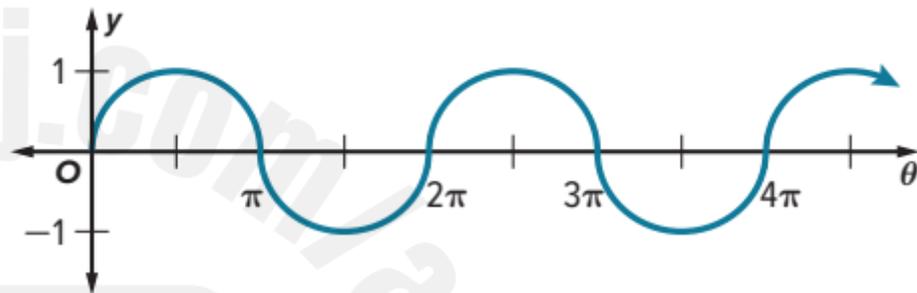
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Determine the period of the function.

15.



16.



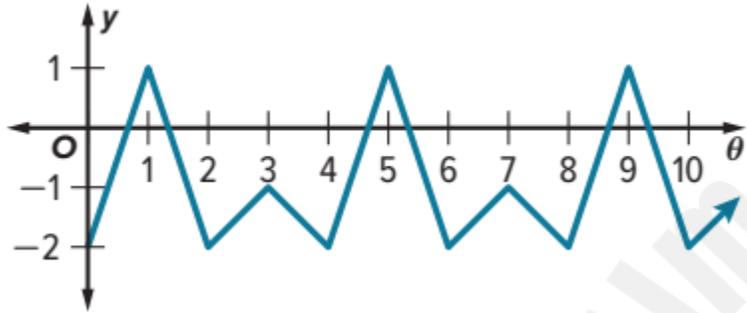
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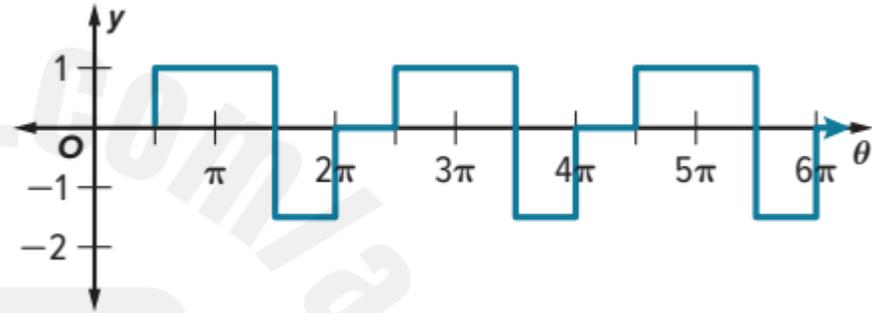
9	Find values of trigonometric functions that model periodic events..	Exercises (13-18)	P441
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Determine the period of the function.

17.



18.



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موقع المفاتيح الإلكترونية

10	Use the properties of periodic functions to evaluate trigonometric functions.	Exercises (21-26)	P442
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Find the exact value of each expression.

21.  $\sin(-510^\circ)$

22.  $\sin 495^\circ$

23.  $\cos\left(-\frac{5\pi}{2}\right)$



10	Use the properties of periodic functions to evaluate trigonometric functions.	Exercises (21-26)	P442
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Find the exact value of each expression.

24.  $\sin \frac{5\pi}{3}$

25.  $\cos \frac{11\pi}{4}$

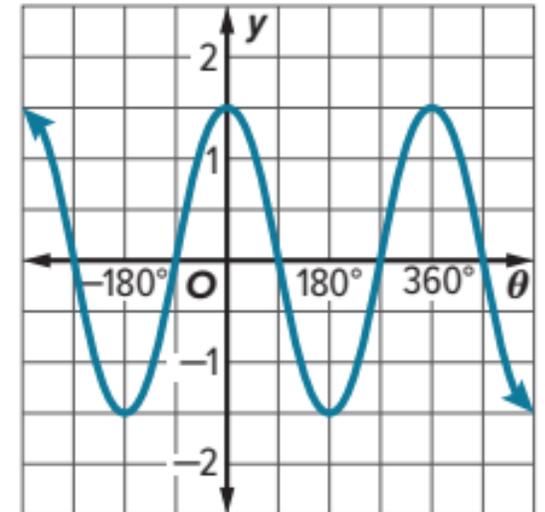
26.  $\sin \left(-\frac{3\pi}{4}\right)$



11	Describe and graph the sine, cosine, and tangent functions	Exercises (24-26)	P452
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For each graph, identify the period and write an equation.

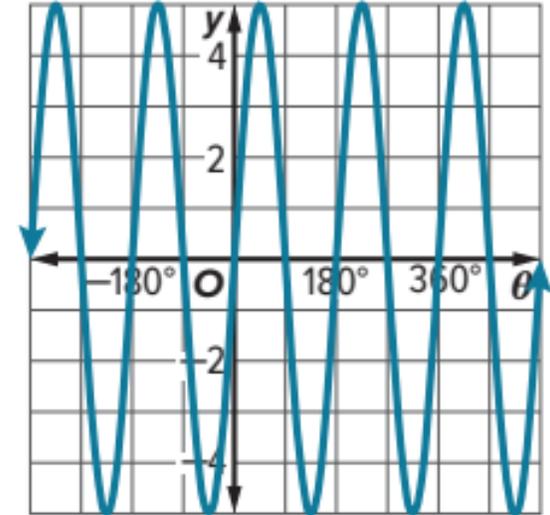
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11	Describe and graph the sine, cosine, and tangent functions	Exercises (24-26)	P452
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For each graph, identify the period and write an equation.

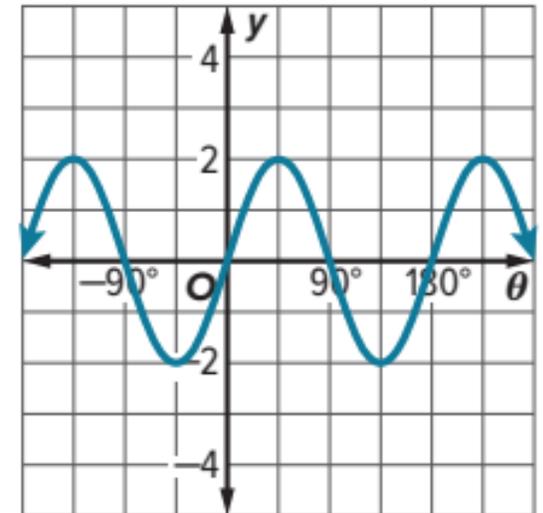
25.



11	Describe and graph the sine, cosine, and tangent functions	Exercises (24-26)	P452
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For each graph, identify the period and write an equation.

26.



12	Model periodic realworld situations with sine and cosine functions.	Exercises (19-20)	P452
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**19. REASONING** A boat that is tied to a dock moves vertically up and down with the waves. Delray watches the boat for 30 seconds and notes that the boat moves up and down a total of 6 times. The difference between the boat's highest point and lowest point is 3 feet. Write and graph a trigonometric function that models the boat's vertical position  $x$  seconds after she began watching. Assume that when Delray began watching the boat, it was at its highest point and that its average vertical position was 0 feet.

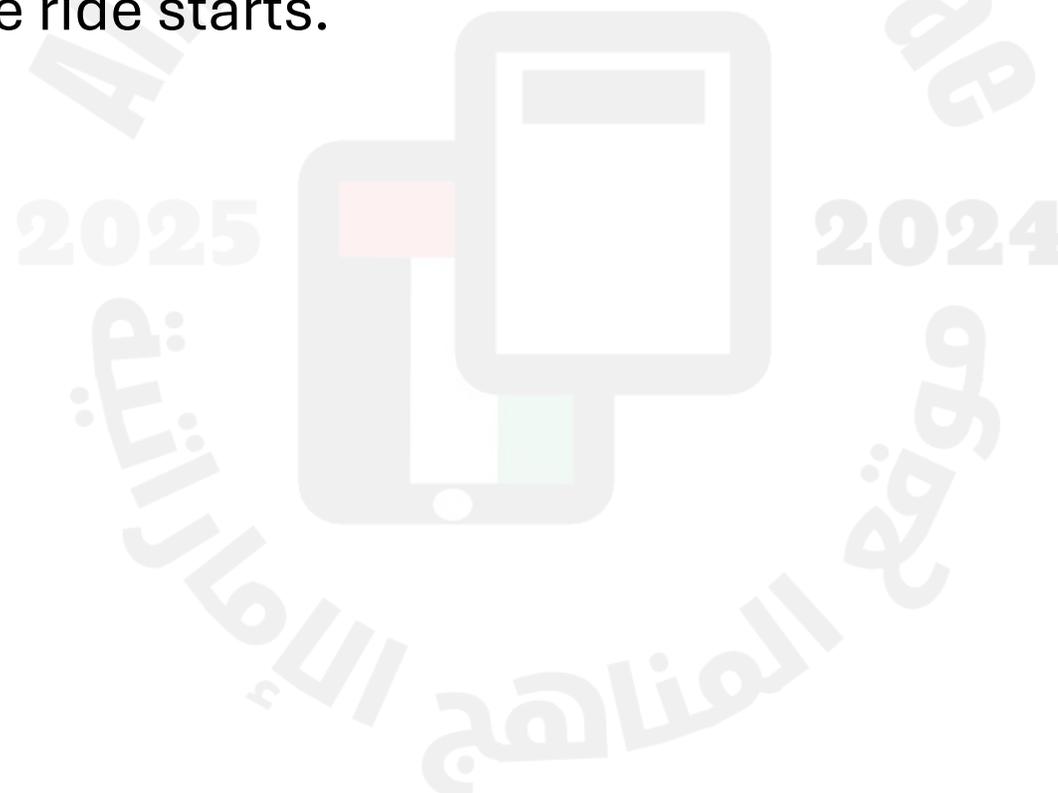
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موقع المناهج  
الأمم المتحدة

12	Model periodic realworld situations with sine and cosine functions.	Exercises (19-20)	P452
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**20. FERRIS WHEELS** A Ferris wheel at a state fair has a diameter of 65 feet and makes 4 complete revolutions each minute. Santiago boards a car of the Ferris wheel at the car's lowest point, and he rides for 2 minutes. Write and graph a trigonometric function that models his height above or below the axle of the Ferris wheel  $\theta$  minutes after the ride starts.



13	Graph and analyze reciprocal trigonometric	Exercises (18-23)	P462
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Find the period of each function. Then graph the function.

18.  $y = 2 \tan \frac{1}{4}\theta$



13	Graph and analyze reciprocal trigonometric	Exercises (18-23)	P462
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Find the period of each function. Then graph the function.

19.  $y = 2 \sec \frac{4}{5}\theta$



13	Graph and analyze reciprocal trigonometric	Exercises (18-23)	P462
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Find the period of each function. Then graph the function.

20.  $y = 5 \csc 3\theta$



13	Graph and analyze reciprocal trigonometric	Exercises (18-23)	P462
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Find the period of each function. Then graph the function.

21.  $y = 2 \cot 6\theta$



13	Graph and analyze reciprocal trigonometric	Exercises (18-23)	P462
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Find the period of each function. Then graph the function.

22.  $y = \sec 3\theta$



13	Graph and analyze reciprocal trigonometric	Exercises (18-23)	P462
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Find the period of each function. Then graph the function.

23.  $y = 2 \sec \theta$



Find each value. Write angle measures in degrees and radians.

1.  $\text{Cos}^{-1}\left(\frac{\sqrt{3}}{2}\right)$

2.  $\text{Sin}^{-1}\left(-\frac{\sqrt{3}}{2}\right)$

3.  $\text{Arccos}\left(-\frac{1}{2}\right)$

4.  $\text{Arctan } \sqrt{3}$

5.  $\text{Arccos}\left(-\frac{\sqrt{2}}{2}\right)$

6.  $\text{Tan}^{-1}(-1)$

7.  $\text{Sin}^{-1}\frac{\sqrt{2}}{2}$

8.  $\text{Cos}^{-1}\left(-\frac{\sqrt{3}}{2}\right)$

9.  $\text{Arcsin } 1$

15	Find values of inverse trigonometric functions.	Exercises (19-30)	P475
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Find  $\theta$  in degrees. Round to the nearest hundredth if necessary.

**19.**  $\sin \theta = 0.8$

**20.**  $\tan \theta = 4.5$

**21.**  $\cos \theta = 0.5$

**22.**  $\cos \theta = -0.95$

**23.**  $\sin \theta = -0.1$

**24.**  $\tan \theta = -1$

15	Find values of inverse trigonometric functions.	Exercises (19-30)	P475
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Find  $\theta$  in degrees. Round to the nearest hundredth if necessary.

25.  $\cos \theta = 0.52$

26.  $\cos \theta = -0.2$

27.  $\sin \theta = 0.35$

28.  $\tan \theta = 8$

29.  $\cos \theta = 0.25$

2024 30.  $\sin \theta = -0.57$

## FRQ - الأسئلة المقالية

**Example 1 Find Probabilities**

A student tossed a fair eight-sided die 200 times and recorded the results.

Find the theoretical and experimental probabilities of rolling an 8.

(A) Theoretical Probability

(B) Experimental Probability

Number on Die	Frequency
1	28
2	19
3	24
4	22
5	21
6	18
7	26
8	42

17

Describe distributions by finding their mean and standard deviation.

Example1

P388

### Example 1 Find a Standard Deviation

TRACK A coach recorded the times of each track member for a 400-meter race.

Find and interpret the standard deviation of the data.

400m Race Times (seconds)	
57.1	55.9
59.3	54.9
54.6	50.3
55.2	53.5

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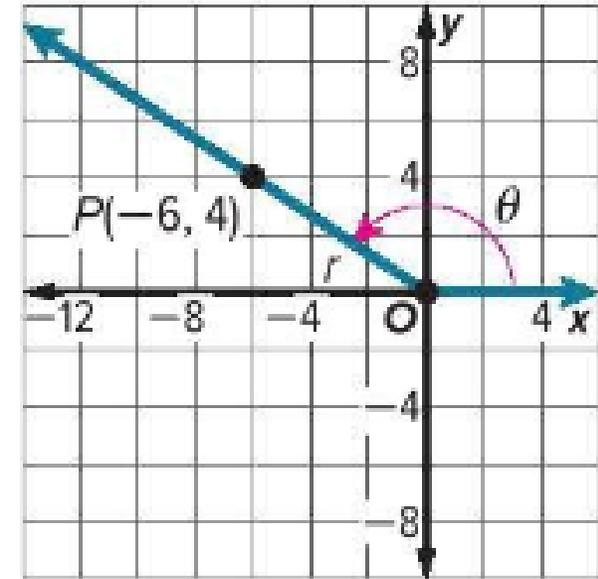
18

Find values of trigonometric functions of general angles.

Example 3

P427

The terminal side of  $\theta$  in standard position contains the point  $(-6, 4)$   
 Find the exact values of the six trigonometric functions of  $\theta$ .



19	Graph horizontal and vertical translations of trigonometric graphs and find phase shifts.	Exercises (26-28)	P470
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State the amplitude, period, phase shift, and vertical shift for each function.  
Then graph the function.

26.  $y = -3 + 2 \sin 2\left(\theta + \frac{\pi}{4}\right)$



19	Graph horizontal and vertical translations of trigonometric graphs and find phase shifts.	Exercises (26-28)	P470
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State the amplitude, period, phase shift, and vertical shift for each function.  
Then graph the function.

27.  $y = 3 \cos 2(\theta + 45^\circ) + 1$



19	Graph horizontal and vertical translations of trigonometric graphs and find phase shifts.	Exercises (26-28)	P470
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State the amplitude, period, phase shift, and vertical shift for each function.  
Then graph the function.

28.  $y = -1 + 4 \tan (\theta + \pi)$



**PLANES:** Suppose a pilot has 30 miles to land a plane at Santa Barbara airport from an elevation of 15,000 feet.

Find the angle in degrees at which the airplane should descend.

