شكراً لتحميلك هذا الملف من موقع المناهج الإماراتية

مراجعة امتحانية وفق الهيكل الوزاري

تاريخ نشر الملف على موقع المناهج: 2023-11-12 16:42:55 | اسم المدرس: Abdelhadi Suha

التواصل الاجتماعي بحسب الصف الثاني عشر العام

روابط مواد الصف الثاني عشر العام على تلغرام

التربية الاسلامية	اللغة العربية	اللغة الانجليزية	الرياضيات

المزيد من الملفات بحسب الصف الثاني عشر العام والمادة رياضيات في الفصل الأول

1	نموذج الهيكل الوزاري الجديد بريدج
2	حل أسئلة الامتحان النهائي
3	أسئلة الامتحان النهائي
4	أوراق عمل درس تحليل التمثيلات البيانية للدوال والعلاقات من الوحدة الأولى
5	أوراق عمل الدرس الأول الدوال من الوحدة الأولى

مؤسسة الإمارات للتعليم المدرسي
EMIRATES SCHOOLS ESTABLISHMENT

Council 6 - Cluster 1

Al Dhaher School - Cycle 3 for Girls

12 General

EOT1 Exam Coverage

2023 - 2024

Done By**: Ms. Suha Abdelhadi**

School Principal**: Asma Khethail**

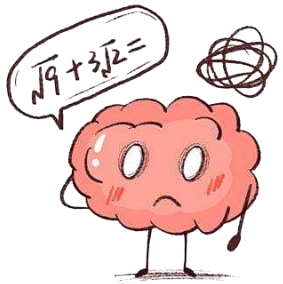
QUESTION 1 | LESSON 1 -1 | PAGE 10 | Question 39- 46

Outcome: Identify and evaluate functions and state their domains.

State the domain of each function. (Example 5)

39. $f(x) = \dfrac{8x + 12}{x^2 + 5x + 4}$

40. $g(x) = \dfrac{x + 1}{x^2 - 3x - 40}$



41. $g(a) = \sqrt{1 + a^2}$

42. $h(x) = \sqrt{6 - x^2}$

43. $f(a) = \dfrac{5a}{\sqrt{4a - 1}}$

44. $g(x) = \dfrac{3}{\sqrt{x^2 - 16}}$

45. $f(x) = \frac{2}{x} + \frac{4}{x+1}$

46. $g(x) = \frac{6}{x+3} + \frac{2}{x-4}$

QUESTION 2

LESSON 1-1 PAGE 9 QUESTION 30 - 37

Outcome: Identify and evaluate functions and state their domains.

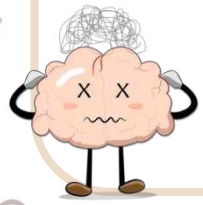
Find each function value. (Example 4)

31. $h(y) = -3y^3 - 6y + 9$

a. $h(4)$

b. $h(-2y)$

c. $h(5b + 3)$



30. $g(x) = 2x^2 + 18x - 14$

a. $g(9)$

b. $g(3x)$

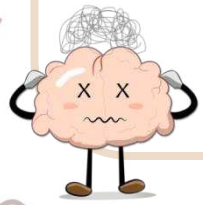
c. $g(1 + 5m)$

32. $f(t) = \dfrac{4t + 11}{3t^2 + 5t + 1}$

a. $f(-6)$

b. $f(4t)$

c. $f(3 - 2a)$



33. $g(x) = \dfrac{3x^3}{x^2 + x - 4}$

a. $g(-2)$

b. $g(5x)$

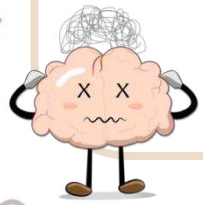
c. $g(8 - 4b)$

34. $h(x) = 16 - \dfrac{12}{2x + 3}$

a. $h(-3)$

b. $h(6x)$

c. $h(10 - 2c)$



35. $f(x) = -7 + \dfrac{6x + 1}{x}$

a. $f(5)$

b. $f(-8x)$

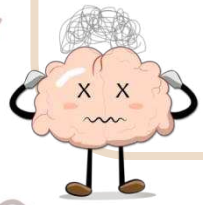
c. $f(6y + 4)$

36. $g(m) = 3 + \sqrt{m^2 - 4}$

a. $g(-2)$

b. $g(3m)$

c. $g(4m - 2)$



37. $t(x) = 5\sqrt{6x^2}$

a. $t(-4)$

b. $t(2x)$

c. $t(7 + n)$

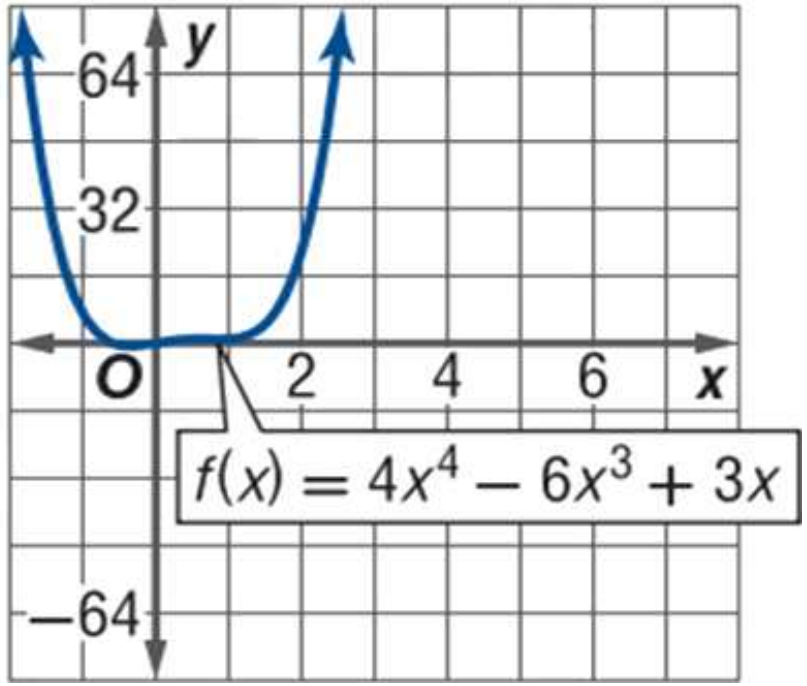
QUESTION 3

LESSON 1 – 3 PAGE 30 QUESTION 22 - 29

Outcome: Use limits to describe the end behaviour of functions.

Use the graph of each function to describe its end behavior. Support the conjecture numerically. (Examples 4 and 5)

22.



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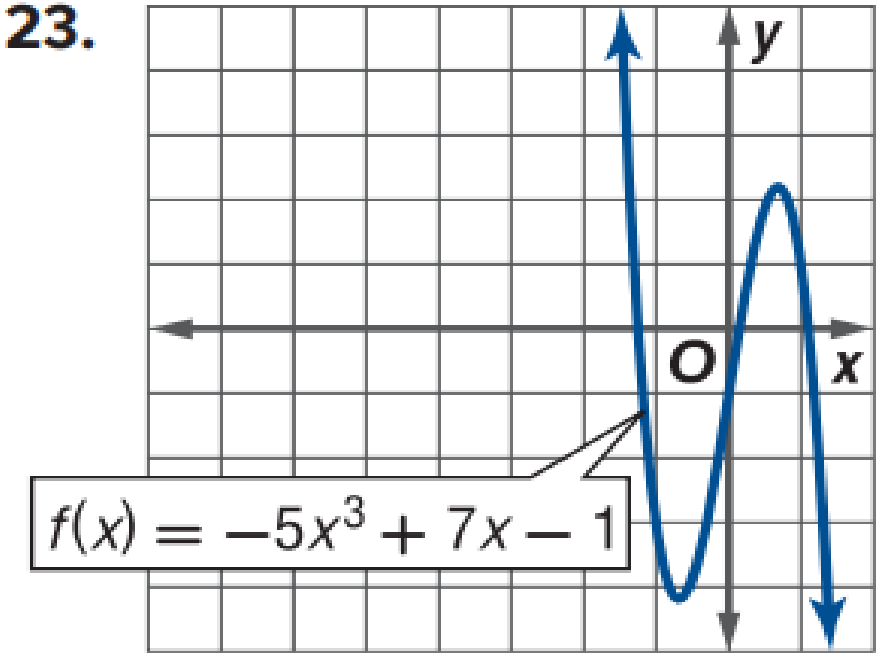

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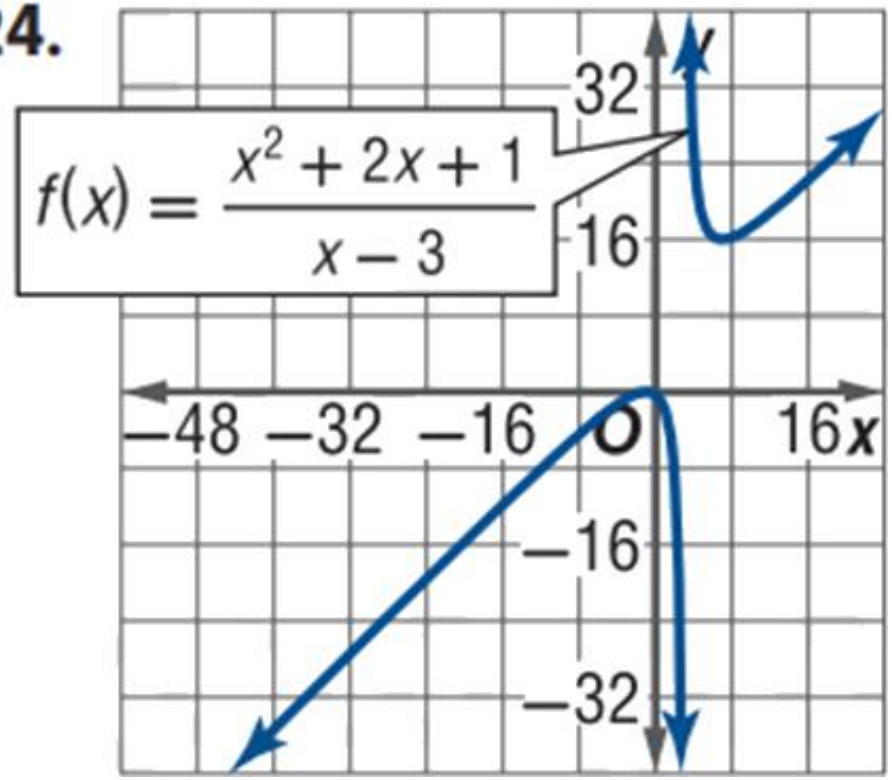

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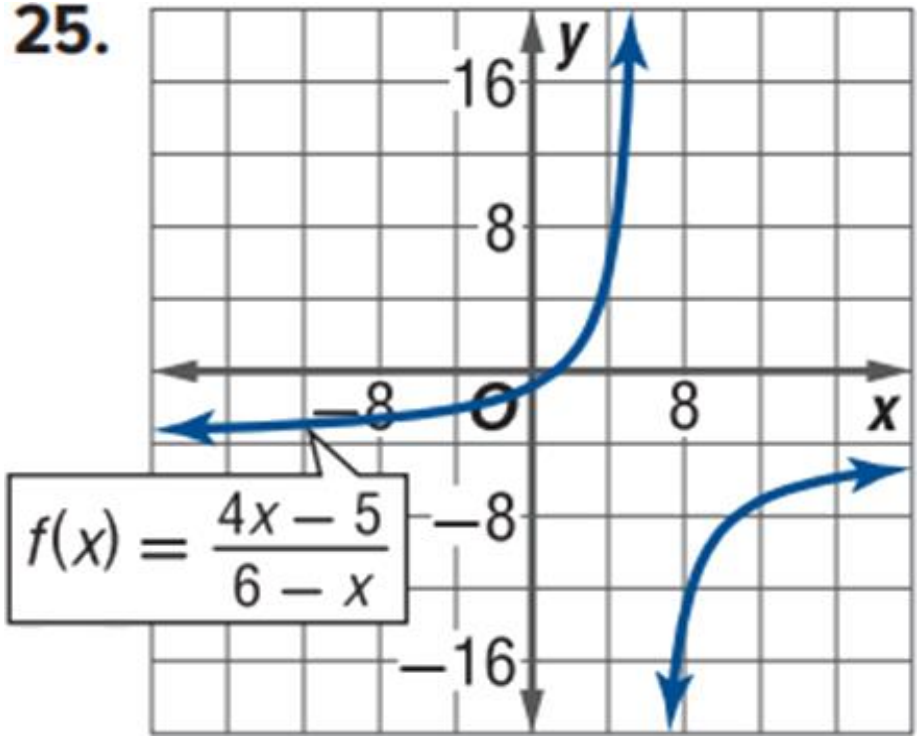

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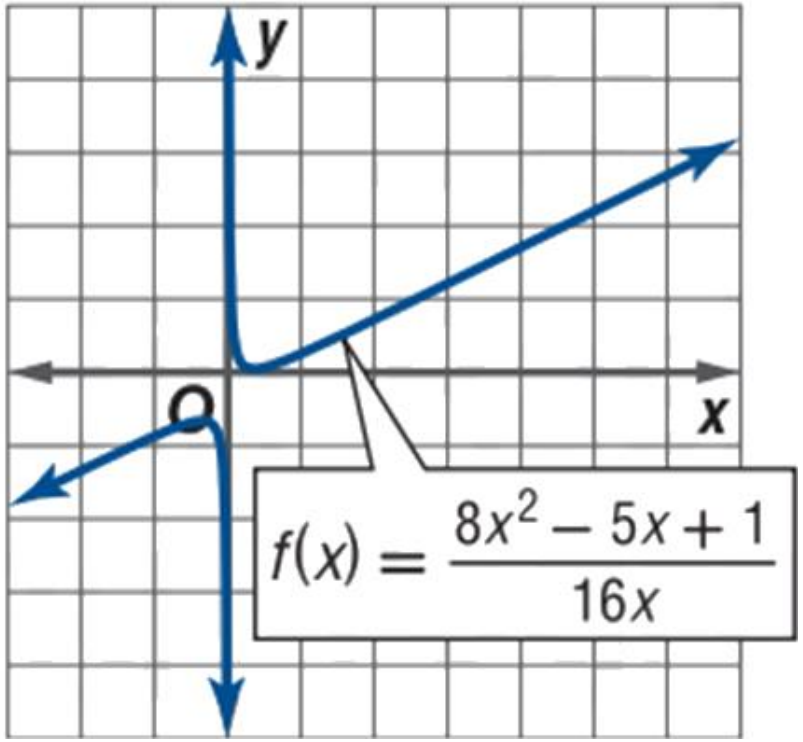

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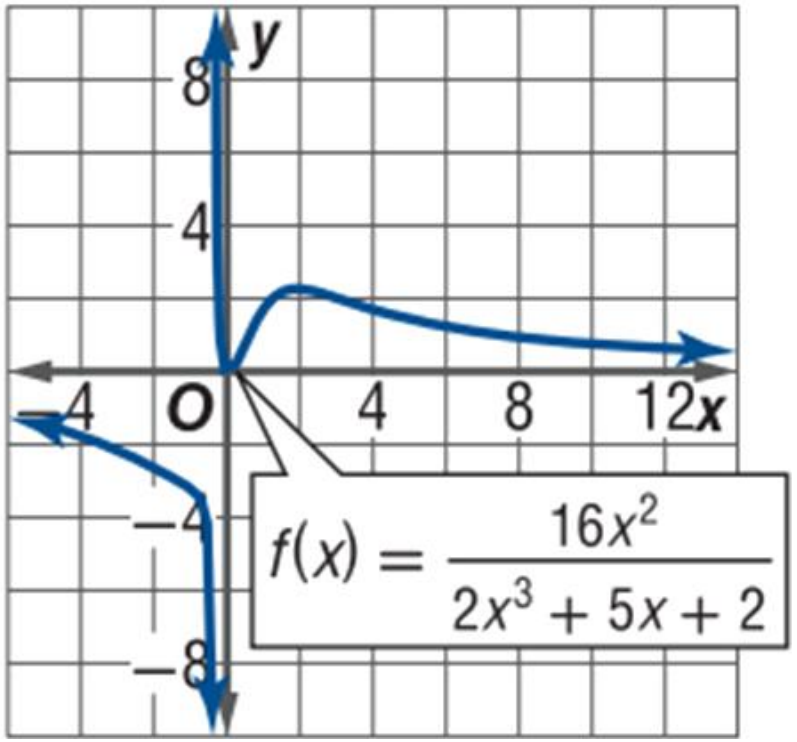

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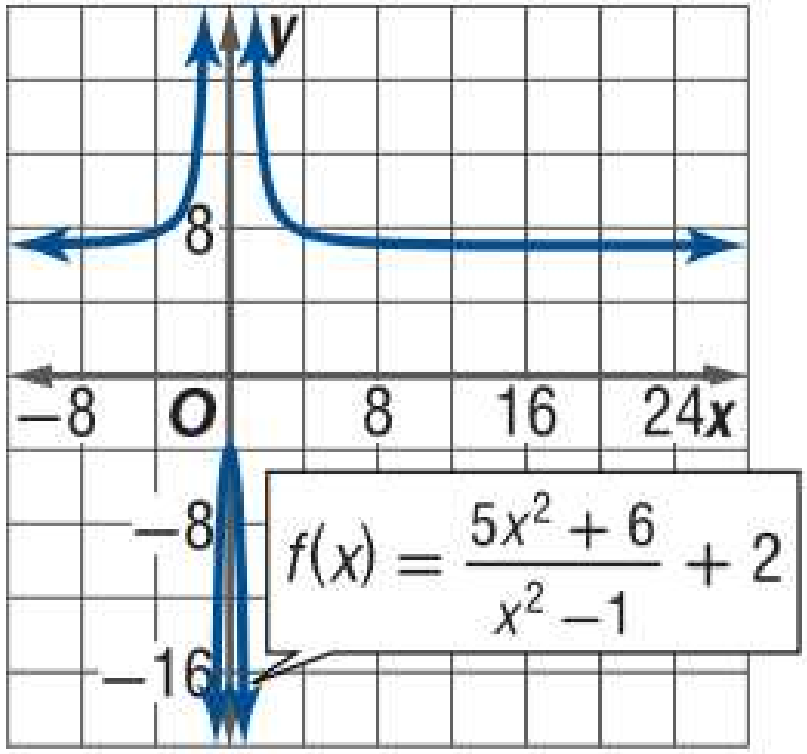

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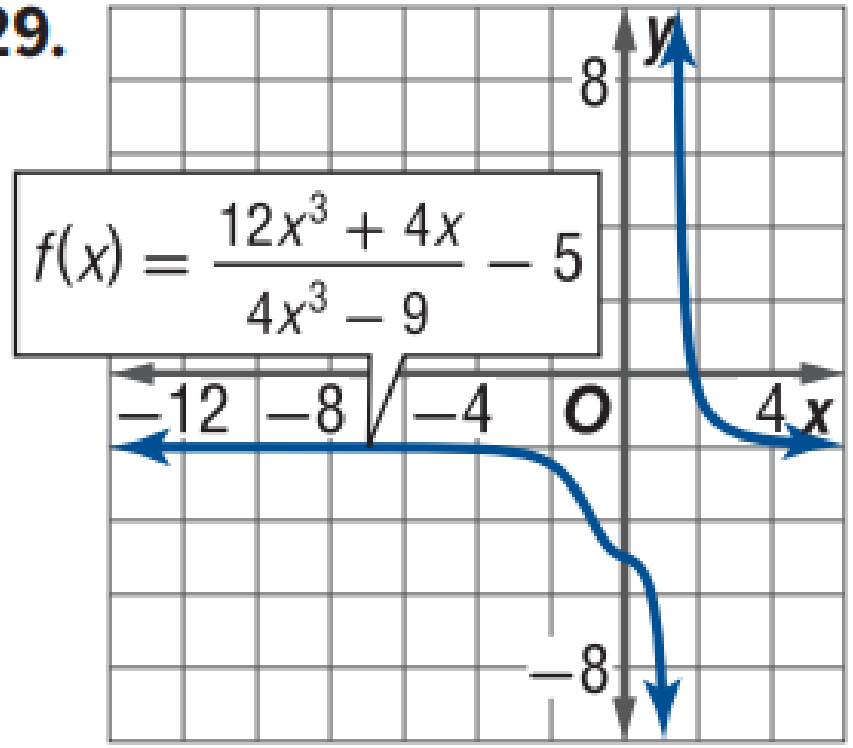


QUESTION 4

LESSON 1 – 3 PAGE 31 QUESTION 33 - 40

Outcome: Use limits to describe the end behavior of functions.

Use logical reasoning to determine the end behavior or limit of the function as x approaches infinity. Explain your reasoning. (Example 6)

33. $q(x) = -\frac{24}{x}$

34. $f(x) = \frac{0.8}{x^2}$

35. $p(x) = \dfrac{x+1}{x-2}$

36. $m(x) = \dfrac{4+x}{2x+6}$

37. $c(x) = \dfrac{5x^2}{x^3+2x+1}$

38. $k(x) = \dfrac{4x^2-3x-1}{11x}$

39. $h(x) = 2x^5 + 7x^3 + 5$

40. $g(x) = x^4 - 9x^2 + \frac{x}{4}$

QUESTION 5

LESSON 3 – 1 PAGE 166 QUESTION 1 - 10

Outcome: Evaluate, analyze, and graph exponential functions

Sketch and analyze the graph of each function. Describe its domain, range, intercepts, asymptotes, end behavior, and where the function is increasing or decreasing. (Example 1)

1. $f(x) = 2^{-x}$

2. $r(x) = 5^{x}$

3. $h(x) = 0.2^{x+2}$

4. $k(x) = 6^{x}$

5. $m(x) = -(0.25)^{x}$

6. $p(x) = 0.1^{-x}$

7. $q(x) = \left(\frac{1}{6}\right)^x$

8. $g(x) = \left(\frac{1}{3}\right)^x$

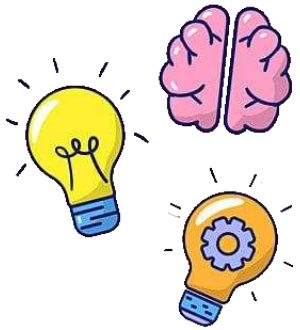
9. $c(x) = 2^x - 3$

10. $d(x) = 5^{-x} + 2$

QUESTION 6

LESSON 3 – 2 PAGE 178 QUESTION 1 - 24

Outcome: Evaluate expressions involving logarithms



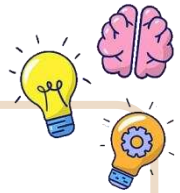
Evaluate each expression. (Examples 1–4)

1. $\log_2 8$

2. $\log_{10} 10$

3. $\log_6 \frac{1}{36}$

4. $4^{\log_4 1}$



5. $\log_{11} 121$

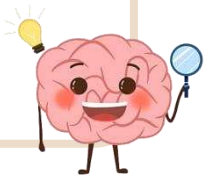
6. $\log_2 2^3$

7. $\log_{\sqrt{9}} 81$

8. $\log 0.01$

9. $\log 42$

10. $\log_x x^2$

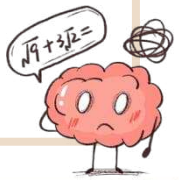


11. $\log 5275$

12. $\ln e^{-14}$

13. $3 \ln e^{4}$

14. $\ln (5 - \sqrt{6})$

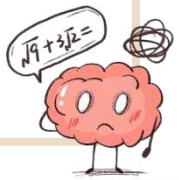


15. $\log_{36} \sqrt[5]{6}$

16. $4 \ln (7 - \sqrt{2})$

17. $\log 635$

18. $\dfrac{\ln 2}{\ln 7}$

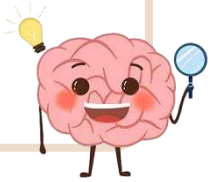


19. $\ln(-6)$

20. $\ln\left(\frac{1}{e^{12}}\right)$

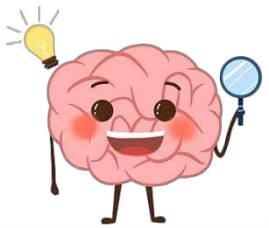
21. $\ln 8$

22. $\log_{\sqrt[7]{4}} 64$



23. $\dfrac{7}{\ln e}$

24. $\log 1000$



QUESTION 7

LESSON 3 – 3 PAGE 185 QUESTION 1 - 16

Outcome: Apply properties of logarithms

Express each logarithm in terms of ln 2 and ln 5. (Example 1)

1. $\ln \frac{4}{5}$

2. $\ln 200$

3. $\ln 80$

4. $\ln 12.5$

5. $\ln \frac{0.8}{2}$

6. $\ln \frac{2}{5}$

7. $\ln 2000$

8. $\ln 1.6$

Express each logarithm in terms of ln 3 and ln 7. (Example 1)

9. $\ln 63$

10. $\ln \frac{49}{81}$

11. $\ln \frac{7}{9}$

12. $\ln 147$

13. $\ln 1323$

14. $\ln \frac{343}{729}$

15. $\ln \frac{2401}{81}$

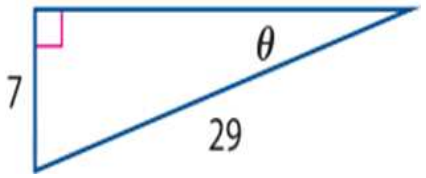
16. $\ln 1701$

QUESTION 8 | LESSON 4 – 1 PAGE 229 QUESTION 31 -38

Outcome: Solve right triangles

Find the measure of angle θ. Round to the nearest degree, if necessary. (Example 5)

31.



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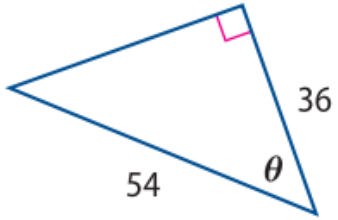

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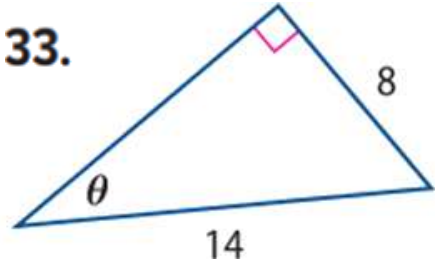

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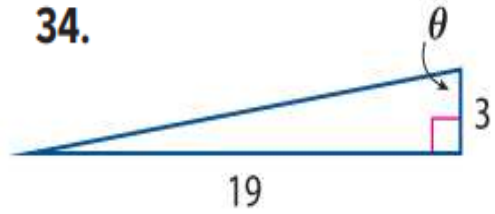

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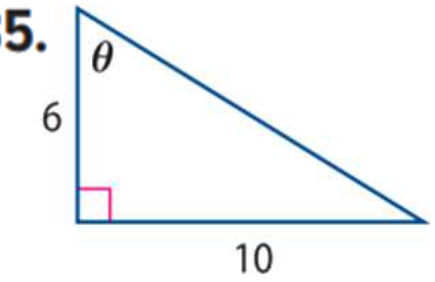

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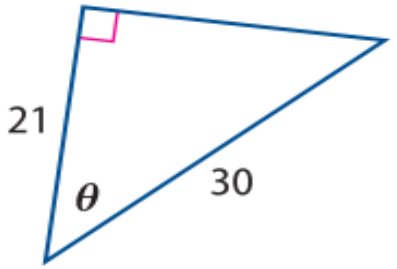

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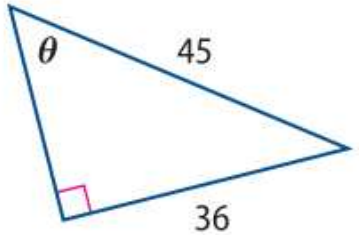

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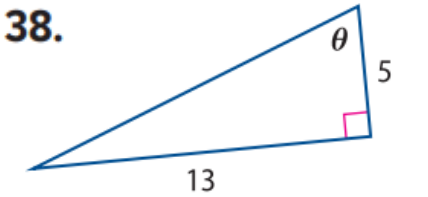


QUESTION 9 | LESSON 4 – 2 | PAGE 240 | QUESTION 27 - 32

Outcome: Use angle measures to solve real – world problems

Find the length of the intercepted arc with the given central angle measure in a circle with the given radius. Round to the nearest tenth. (Example 4)

27. $\frac{\pi}{6}, r = 2.5$ m

28. $\frac{2\pi}{3}, r = 3$ cm

29. $\frac{5\pi}{12}, r = 4$ m

30. $105^\circ, r = 18.2$ cm

31. $45^\circ, r = 5$ km

32. $150^\circ, r = 79$ mm

QUESTION 10 | LESSON 4 – 3 | PAGE 253 | QUESTION 1 - 8

Outcome: Find values of trigonometric functions for any angle

The given point lies on the terminal side of an angle θ in standard position. Find the values of the six trigonometric functions of θ. (Example 1)

1. $(3, 4)$

2. $(-6, 6)$

3. $(-4, -3)$

4. $(2, 0)$

5. $(1, -8)$

6. $(5, -3)$

7. $(-8, 15)$

8. $(-1, -2)$

QUESTION 11 | LESSON 4 – 3 | PAGE 253 | QUESTION 17 -24

Outcome: Find values of trigonometric functions for any angle

Sketch each angle. Then find its reference angle. (Example 3)

17. 135°

18. 210°

19. $\frac{7\pi}{12}$

20. $\frac{11\pi}{3}$

21. -405°

22. -75°

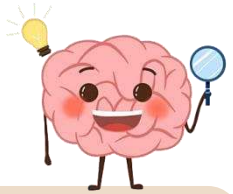
23. $\frac{5\pi}{6}$

24. $\frac{13\pi}{6}$

QUESTION 12 | LESSON 4 – 6 | PAGE 290 | QUESTION 29 - 40

Outcome: Find compositions of trigonometric functions

Find the exact value of each expression, if it exists. (Examples 6 and 7)



29. $\sin\left(\sin^{-1}\frac{3}{4}\right)$

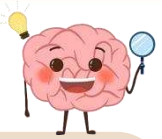
30. $\sin^{-1}\left(\sin\frac{\pi}{2}\right)$

31. $\cos\left(\cos^{-1}\frac{2}{9}\right)$

32. $\cos^{-1}(\cos\pi)$

33. $\tan\left(\tan^{-1}\frac{\pi}{4}\right)$

34. $\tan^{-1}\left(\tan\frac{\pi}{3}\right)$



35. $\cos\left(\tan^{-1}1\right)$

36. $\sin^{-1}\left(\cos\frac{\pi}{2}\right)$

37. $\sin\left(2\cos^{-1}\frac{\sqrt{2}}{2}\right)$

38. $\sin\left(\tan^{-1}1 - \sin^{-1}1\right)$

39. $\cos\left(\tan^{-1}1 - \sin^{-1}1\right)$

40. $\cos\left(\cos^{-1}0 + \sin^{-1}\frac{1}{2}\right)$

QUESTION 13 | LESSON PAGE 309 | QUESTION 22 - 31

Outcome: Use basic trigonometric identities to simplify and rewrite trigonometric expressions

Simplify each expression. (Examples 4 and 5)

22. $\csc x \sec x - \tan x$

23. $\csc x - \cos x \cot x$

24. $\sec x \cot x - \sin x$

25. $\dfrac{\tan x + \sin x \sec x}{\csc x \tan x}$

26. $\dfrac{1 - \sin^2 x}{\csc^2 x - 1}$

27. $\dfrac{\csc x \cos x + \cot x}{\sec x \cot x}$

28. $\dfrac{\sec x \csc x - \tan x}{\sec x \csc x}$

29. $\dfrac{\sec^2 x}{\cot^2 x + 1}$

30. $\cot x - \csc^2 x \cot x$

31. $\cot x - \cos^3 x \csc x$

QUESTION 14 | LESSON 5 – 2 | PAGE 316 | QUESTION 1 - 10

Outcome: Verify trigonometric identities

Verify each identity. (Examples 1–3)

1. $(\sec^2 \theta - 1)\cos^2 \theta = \sin^2 \theta$

2. $\sec^2 \theta(1 - \cos^2 \theta) = \tan^2 \theta$

3. $\sin\theta - \sin\theta\cos^2\theta = \sin^3\theta$

4. $\csc\theta - \cos\theta\cot\theta = \sin\theta$

5. $\cot^2\theta\csc^2\theta - \cot^2\theta = \cot^4\theta$

6. $\tan\theta\csc^2\theta - \tan\theta = \cot\theta$

7. $\dfrac{\sec\theta}{\sin\theta} - \dfrac{\sin\theta}{\cos\theta} = \cot\theta$

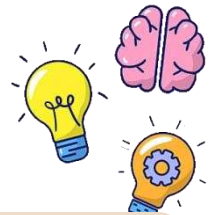
8. $\dfrac{\sin\theta}{1-\cos\theta} + \dfrac{1-\cos\theta}{\sin\theta} = 2\csc\theta$

9. $\dfrac{\cos\theta}{1+\sin\theta} + \tan\theta = \sec\theta$

10. $\dfrac{\sin\theta}{1-\cot\theta} + \dfrac{\cos\theta}{1-\tan\theta} = \sin\theta + \cos\theta$

QUESTION 15 | LESSON 5 – 3 | PAGE 323 | QUESTION 1- 18

Outcome: Solve trigonometric equations using algebraic techniques



Solve each equation for all values of x. (Examples 1 and 2)

1. $5 \sin x + 2 = \sin x$

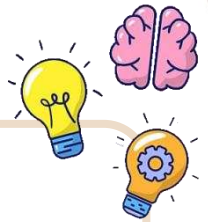
2. $5 = \sec^2 x + 3$

3. $2 = 4 \cos^2 x + 1$

4. $4 \tan x - 7 = 3 \tan x - 6$

5. $9 + \cot^2 x = 12$

6. $2 - 10 \sec x = 4 - 9 \sec x$

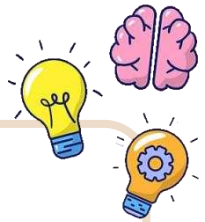


7. $3 \csc x = 2 \csc x + \sqrt{2}$

8. $11 = 3 \csc^2 x + 7$

9. $6 \tan^2 x - 2 = 4$

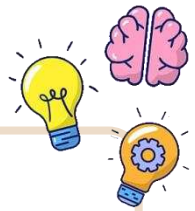
10. $9 + \sin^2 x = 10$



11. $7 \cot x - \sqrt{3} = 4 \cot x$

12. $7 \cos x = 5 \cos x + \sqrt{3}$

Find all solutions of each equation on $[0, 2\pi]$. (Example 3)



13. $\sin^4 x + 2\sin^2 x - 3 = 0$

14. $-2\sin x = -\sin x \cos x$

15. $4\cot x = \cot x \sin^2 x$

16. $\csc^2 x - \csc x + 9 = 11$

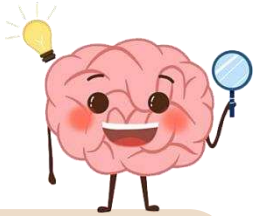
17. $\cos^3 x + \cos^2 x - \cos x = 1$

18. $2\sin^2 x = \sin x + 1$

QUESTION 16 | LESSON 1 – 3 PAGE 30 | QUESTION 1 - 10

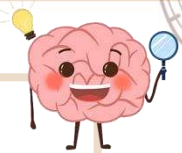
Outcome: Use limits to determine the continuity of a function

Determine whether each function is continuous at the given *x*-value(s). Justify using the continuity test. If discontinuous, identify the type of discontinuity as *infinite*, *jump*, or *removable*. (Examples 1 and 2)



1. $f(x) = \sqrt{x^2 - 4}$; at $x = -5$

2. $f(x) = \sqrt{x + 5}$; at $x = 8$



3. $h(x) = \dfrac{x^2 - 36}{x + 6}$; at $x = -6$ and $x = 6$

4. $h(x) = \dfrac{x^2 - 25}{x + 5}$; at $x = -5$ and $x = 5$

5. $g(x) = \dfrac{x}{x - 1}$; at $x = 1$

6. $g(x) = \dfrac{2 - x}{2 + x}$; at $x = -2$ and $x = 2$

7. $h(x) = \dfrac{x-4}{x^2-5x+4}$; at $x = 1$ and $x = 4$

8. $h(x) = \dfrac{x(x-6)}{x^3}$; at $x = 0$ and $x = 6$

9. $f(x) = \begin{cases} 4x-1 & \text{if} \quad x \leq -6 \\ -x+2 & \text{if} \quad x > -6 \end{cases}$; at $x = -6$

10. $f(x) = \begin{cases} x^2-1 & \text{if} \quad x > -2 \\ x-5 & \text{if} \quad x \leq -2 \end{cases}$; at $x = -2$

QUESTION 17

LESSON 1 – 4 PAGE 41 QUESTION 34 - 40

Outcome: Determine the average rate of change of a function

Find the average rate of change of each function on the given interval. (Example 5)

34. $g(x) = -4x^2 + 3x - 4; [-1, 3]$

35. $g(x) = 3x^2 - 8x + 2; [4, 8]$

36. $f(x) = 3x^3 - 2x^2 + 6; [2, 6]$

37. $f(x) = -2x^3 - 4x^2 + 2x - 8; [-2, 3]$

38. $f(x) = 3x^4 - 2x^2 + 6x - 1; [5, 9]$

39. $f(x) = -2x^4 - 5x^3 + 4x - 6; [-1, 5]$

40. $h(x) = -x^5 - 5x^2 + 6x - 9; [3, 6]$

QUESTION 18 | LESSON 3 – 1 | PAGE 166 | QUESTION 25 -33

Outcome: Solve problems involving exponential growth and decay

25 **FINANCIAL LITERACY** Ahmed acquired an inheritance of AED 20,000 at age 8, but he will not have access to it until he turns 18. (Examples 4 and 5)

a. If his inheritance is placed in a savings account earning 4.6% interest compounded monthly, how much will Ahmed's inheritance be worth on his 18th birthday?

b. How much will Ahmed's inheritance be worth if it is placed in an account earning 4.2% interest compounded continuously?

26. **FINANCIAL LITERACY** Eman invests AED 1200 in a certificate of deposit (CD). The table shows the interest rates offered by the bank on 3- and 5-year CDs. (Examples 4 and 5)

CD Offers		
Years	3	5
Interest	3.45%	4.75%
Compounded	continuously	monthly

a. How much would her investment be worth with each option?

b. How much would her investment be worth if the 5-year CD was compounded continuously?

POPULATION **Copy and complete the table to find the population N of an endangered species after a time t given its initial population N_0 and annual rate r or continuous rate k of increase or decline.** (Example 6)

t	5	10	15	20	50
N					

27. $N_0 = 15{,}831,\ r = -4.2\%$

28. $N_0 = 23{,}112,\ r = 0.8\%$

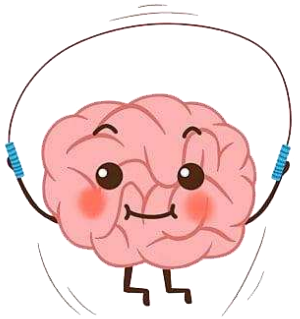
29. $N_0 = 17{,}692,\ k = 2.02\%$

30. $N_0 = 9689,\ k = -3.7\%$

31. **WATER** Worldwide water usage in 1950 was about 294.2 million gallons. If water usage has grown at the described rate, estimate the amount of water used in 2000 and predict the amount in 2050. (Example 6)

a. 3% annually

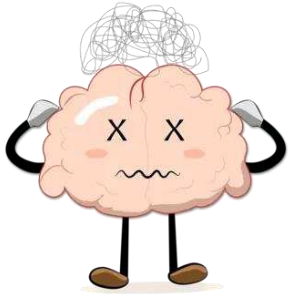
b. 3.05% continuously



32. **WAGES** Yasmin receives a 3.5% raise at the end of each year from her employer to account for inflation. When she started working for the company in 1994, she was earning a salary of AED 31,000. (Example 6)

a. What was Yasmin's salary in 2000 and 2004?

b. If Yasmin continues to receive a raise at the end of each year, how much money will she earn during her final year if she plans on retiring in 2024?



33. **PEST CONTROL** Consider the termite guarantee made by Exterm-inc in their ad below.

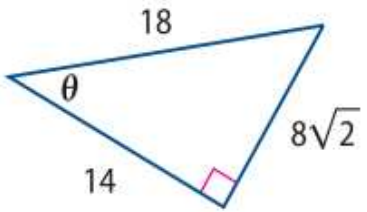
If the first statement in this claim is true, assess the validity of the second statement. Explain your reasoning. (Example 6)

QUESTION 19 | LESSON 4 – 1 PAGE 229 QUESTION 1 - 18

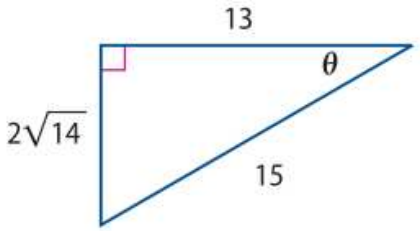
Outcome: Find values of trigonometric functions for acute angles of right triangles

Find the exact values of the six trigonometric functions of θ. (Example 1)

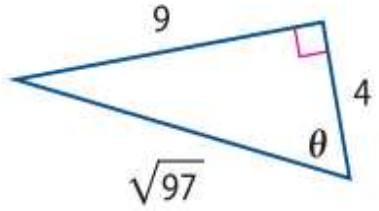
1.



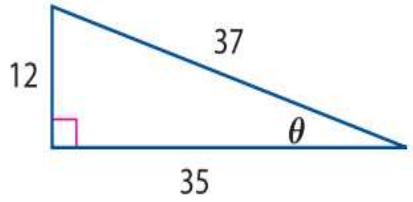
2.



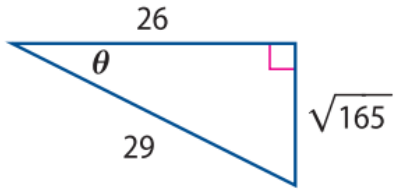
3.



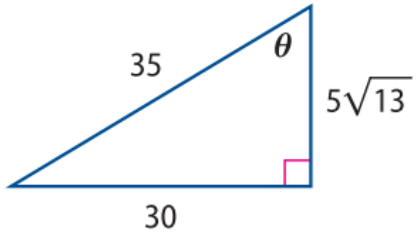
4.



5.



6.



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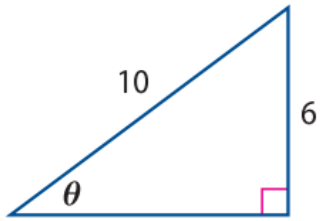

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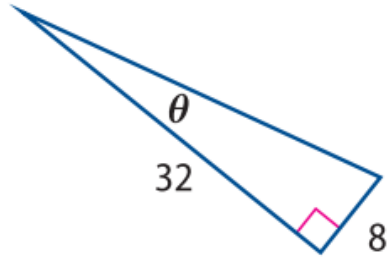


Use the given trigonometric function value of the acute angle θ to find the exact values of the five remaining trigonometric function values of θ. (Example 2)

9. $\sin\theta = \frac{4}{5}$

10. $\cos\theta = \frac{6}{7}$

11. $\tan\theta = 3$

12. $\sec\theta = 8$

13. $\cos\theta = \frac{5}{9}$

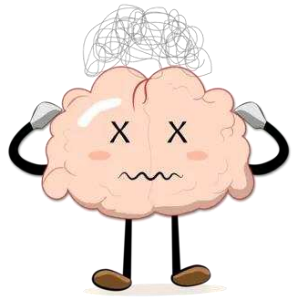
14. $\tan\theta = \frac{1}{4}$

15. $\cot\theta = 5$

16. $\csc\theta = 6$

17. $\sec\theta = \frac{9}{2}$

18. $\sin\theta = \frac{8}{13}$



QUESTION 20 | LESSON 4 – 4 | PAGE 266 | QUESTION 14 - 19

Outcome: Graph transformations of the sine and cosine functions

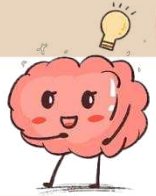
State the amplitude, period, frequency, phase shift, and vertical shift of each function. Then graph two periods of the function. (Examples 5 and 6)

14. $y = 3 \sin\left(x - \frac{\pi}{4}\right)$

15. $y = \cos\left(\frac{x}{3} + \frac{\pi}{2}\right)$

16. $y = 0.25 \cos x + 3$

17. $y = \sin 3x - 2$



18. $y = \cos\left(x - \frac{3\pi}{2}\right) - 1$

19. $y = \sin\left(x + \frac{5\pi}{6}\right) + 4$

QUESTION 21 | LESSON 5 - 2 | PAGE 316 | QUESTION 1 - 15

Outcome: Verify trigonometric identities

1. $(\sec^2 \theta - 1)\cos^2 \theta = \sin^2 \theta$

2. $\sec^2 \theta(1 - \cos^2 \theta) = \tan^2 \theta$

3. $\sin \theta - \sin \theta \cos^2 \theta = \sin^3 \theta$

4. $\csc \theta - \cos \theta \cot \theta = \sin \theta$

5. $\cot^2\theta \csc^2\theta - \cot^2\theta = \cot^4\theta$

6. $\tan\theta \csc^2\theta - \tan\theta = \cot\theta$

7. $\dfrac{\sec\theta}{\sin\theta} - \dfrac{\sin\theta}{\cos\theta} = \cot\theta$

8. $\dfrac{\sin\theta}{1-\cos\theta} + \dfrac{1-\cos\theta}{\sin\theta} = 2\csc\theta$

9. $\dfrac{\cos\theta}{1+\sin\theta} + \tan\theta = \sec\theta$

10. $\dfrac{\sin\theta}{1-\cot\theta} + \dfrac{\cos\theta}{1-\tan\theta} = \sin\theta + \cos\theta$

11. $\frac{1}{1-\tan^2\theta}+\frac{1}{1-\cot^2\theta}=1$

12. $\frac{1}{\csc\theta+1}+\frac{1}{\csc\theta-1}=2\sec^2\theta\sin\theta$

13. $(\csc\theta-\cot\theta)(\csc\theta+\cot\theta)=1$

14. $\cos^4\theta-\sin^4\theta=\cos^2\theta-\sin^2\theta$

15. $\frac{1}{1-\sin\theta}+\frac{1}{1+\sin\theta}=2\sec^2\theta$

*** مع أطيب الأمنيات لكم بالتوفيق ***