

ملزمة مراجعة وفق الهيكل الوزاري منهج ريفيل



تم تحميل هذا الملف من موقع المناهج الإماراتية

موقع المناهج ← المناهج الإماراتية ← الصف الثاني عشر العام ← رياضيات ← الفصل الأول ← ملفات متنوعة ← الملف

تاريخ إضافة الملف على موقع المناهج: 00:18:34 2025-10-22

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

المزيد من مادة
رياضيات:

إعداد: كرم أسعد

التواصل الاجتماعي بحسب الصف الثاني عشر العام



صفحة المناهج
الإماراتية على
فيسبوك

الرياضيات

اللغة الانجليزية

اللغة العربية

التربية الاسلامية

المواد على تلغرام

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

تجميعية أسئلة شاملة وفق الهيكل الوزاري الجديد منهج ريفيل

1

تجميعية أسئلة شاملة وفق الهيكل الوزاري الجديد منهج بريدج

2

تجميعية مراجعة نهائية وفق الهيكل الوزاري منهج ريفيل

3

مراجعة الأسئلة الخمسة الأولى من الهيكل الوزاري الجديد للمنهجين ريفيل وبريدج

4

تجميعية أسئلة الكتاب وفق الهيكل الوزاري الجديد منهج بريدج

5

ملزمة هيكل الصف الثاني عشر

عام (ريفيل)

2026-2025

Mathematics

الترم الاول

إعداد

أ / كرم اسعد

للاستفسار: 0505308082

يمكنكم التواصل للمساعدة وحجز المواعيد

Haykal

Grade 12 general

1st term (2025-2026)

Mr. Karam Asaad (0505308082)

First : multiple choices questions اولاً اسئلة الاختيار من متعدد

Lesson:

Graph quadratic functions.

Exercise:

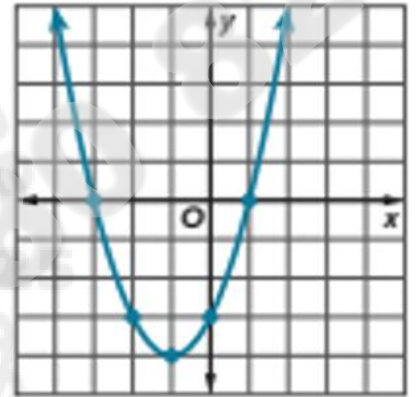
Example 1 & (1-4)

Page:

4 & 9

Graph $f(x) = x^2 + 2x - 3$. state the domain and range.

- a) Domain is all real numbers, range $y \geq -4$
- b) Domain is all real numbers, range $y \leq -4$
- c) Domain is all real numbers, range $y > -4$
- d) Domain is all real numbers, range $y < -4$

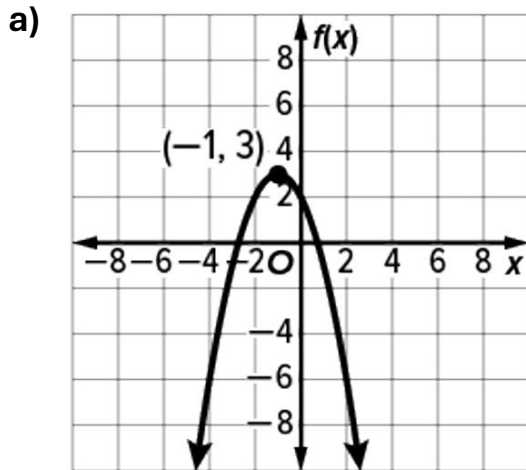


Graph each function. Then state the domain and range.

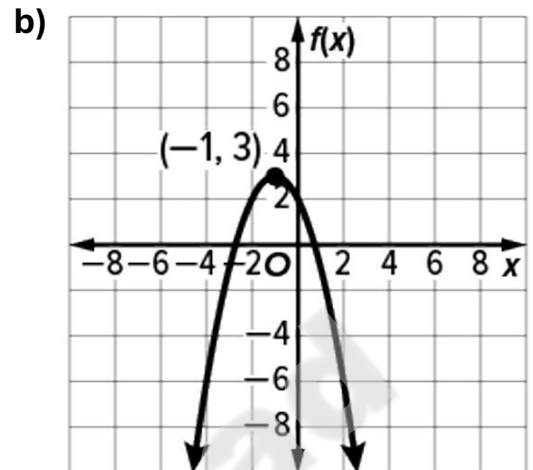
1. $f(x) = x^2 + 6x + 8$

- a) $D = \{\text{all real numbers}\}, R = \{y \mid y \leq 0\}$
- b) $D = \{\text{all real numbers}\}, R = \{y \mid y \geq 1\}$
- c) $D = \{\text{all real numbers}\}, R = \{y \mid y \leq 3\}$
- d) $D = \{\text{all real numbers}\}, R = \{y \mid y \geq -1\}$

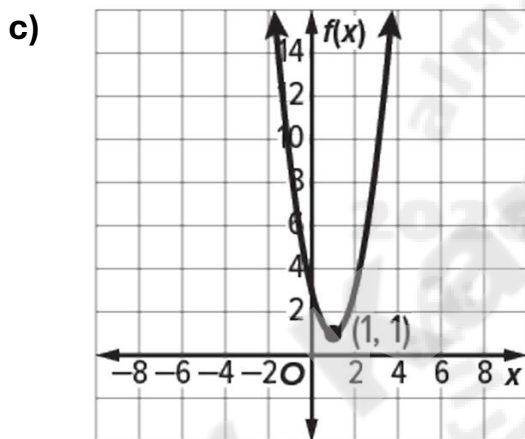
2. $f(x) = -x^2 - 2x + 2$



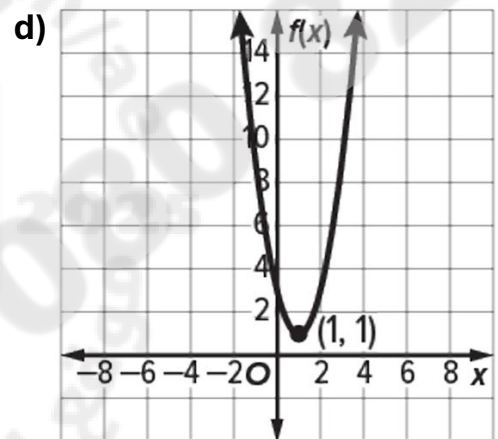
$D = \{\text{all real numbers}\}, R = \{y \mid y \leq 3\}$



Domain is all real numbers, range $y \geq 3$



Domain is all real numbers, range $y \geq 1$



Domain is all real numbers, range $y \leq 1$

4. $f(x) = -2x^2$

a) $D = \{\text{all real numbers}\}, R = \{y \mid y \geq 0\}$

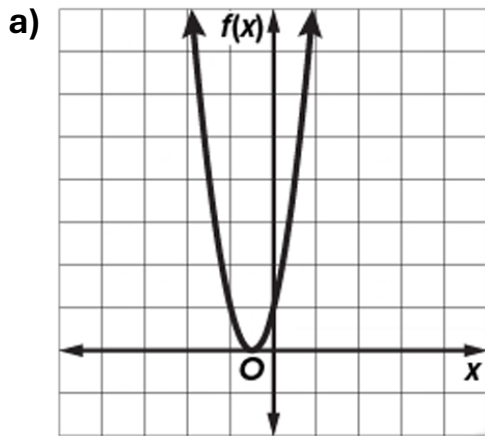
b) $D = \{\text{all real numbers}\}, R = \{y \mid y \geq 1\}$

c) $D = \{\text{all real numbers}\}, R = \{y \mid y \leq 0\}$

d) $D = \{\text{all real numbers}\}, R = \{y \mid y \geq 0\}$

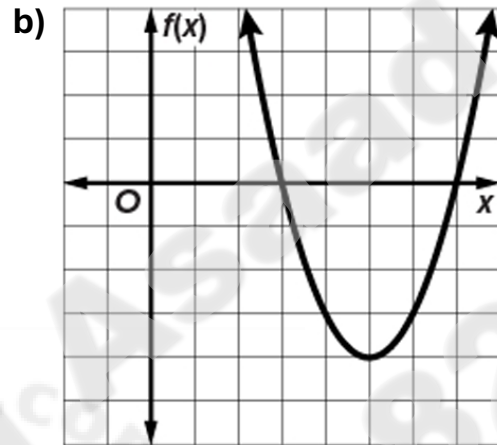
Solve each equation by graphing.

4. $x^2 - 10x + 21 = 0$



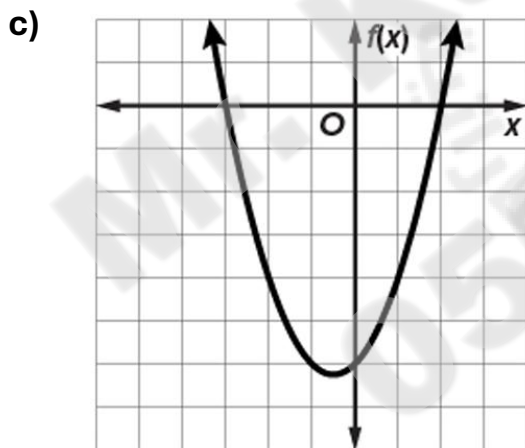
ANSWER:

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



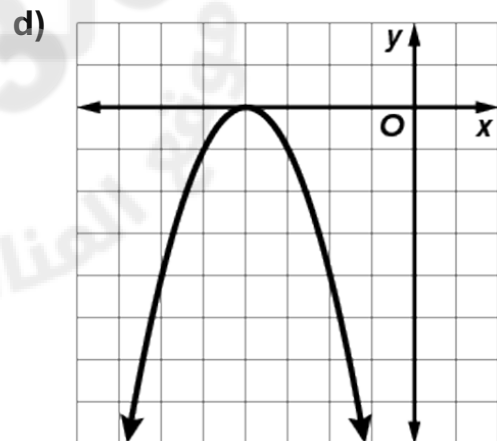
ANSWER:

$$3, 7$$



ANSWER:

$$2, -3$$



ANSWER:

$$2, -3$$

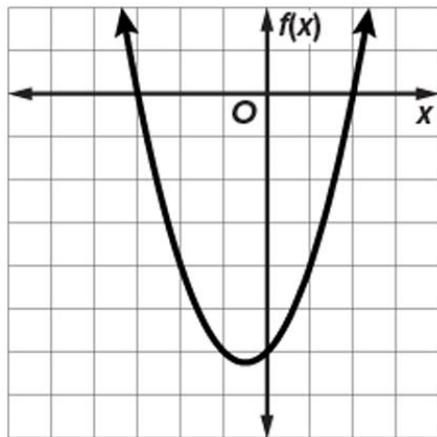
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$$8. -x^2 - 6x - 9 = 0$$

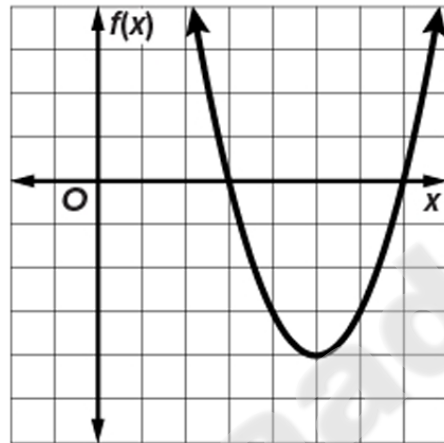
a)



ANSWER:

2, -3

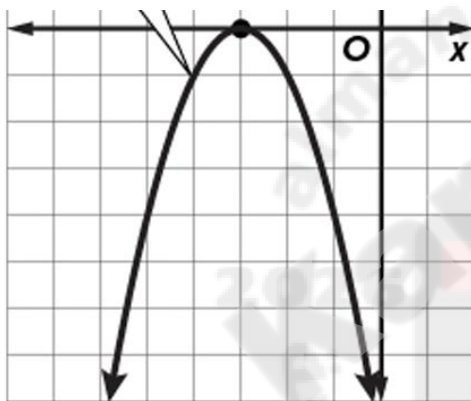
b)



ANSWER:

3, 7

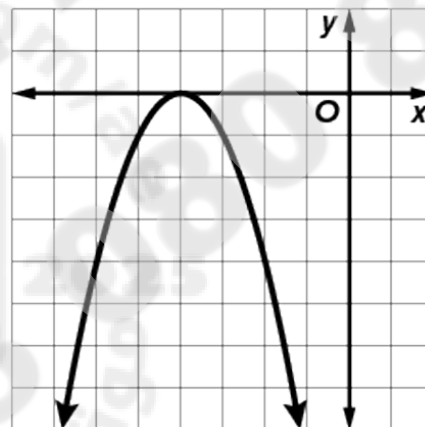
c)



ANSWER:

-3

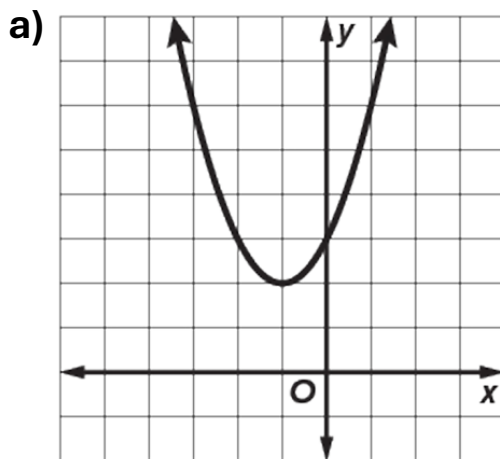
d)



ANSWER:

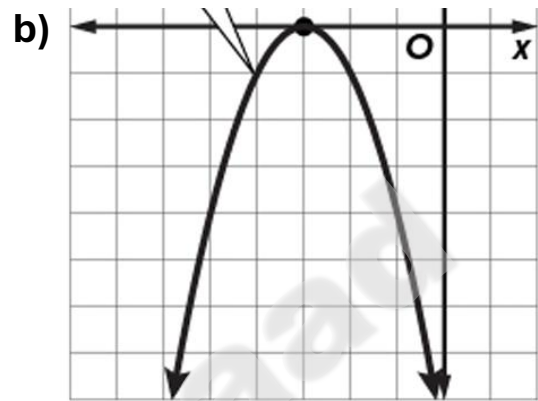
-3

10. $x^2 + 2x + 3 = 0$



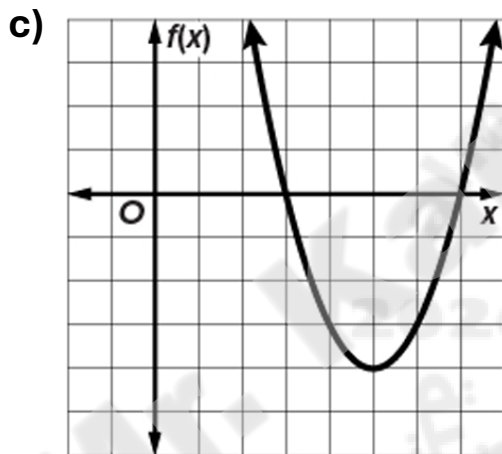
ANSWER:

-3



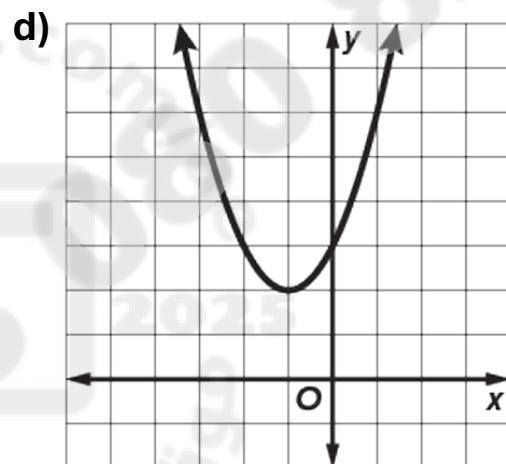
ANSWER:

-3



ANSWER:

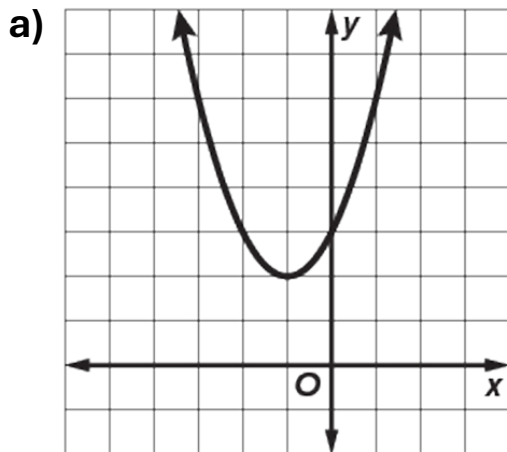
3, 7



ANSWER:

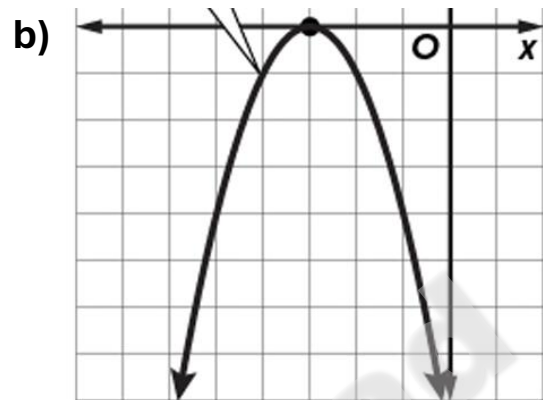
no real solution

12. $-x^2 - 8x - 16 = 0$



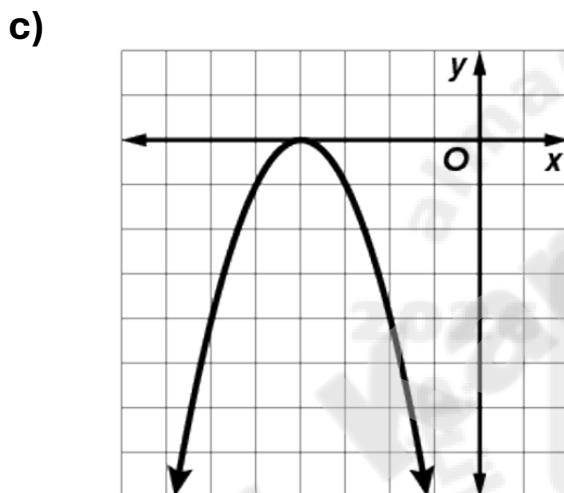
ANSWER:

-3



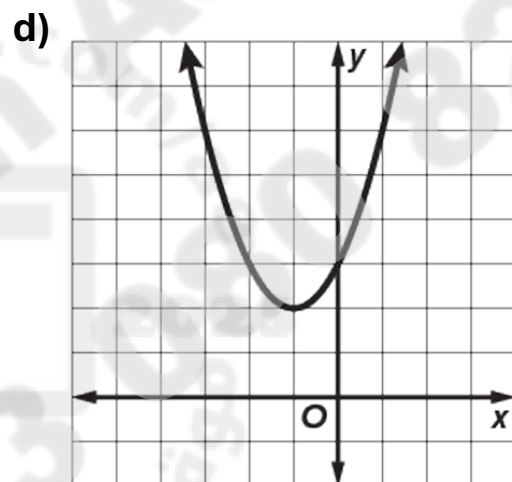
ANSWER:

-3



ANSWER:

-4



ANSWER:

no real solution

Lesson:

Solve Quadratic Equations by Factoring.

Exercise:

Example 1 & Example 2 & Example 4

Page:

27 & 28 & 29

Solve by factoring: $12x^2 - 2x = x$

Solve by factoring: $x^2 - 6x - 9 = 18$

Solve by factoring: $3x^2 + 5x + 15 = 17$

Lesson:

Complete the square in quadratic expressions to solve quadratic equations.

Exercise:

Example 4

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Find the value of c that makes $x^2 - 7x + c$ a perfect square. Then write the expression as a perfect square trinomial.

Lesson:

Complete the square in quadratic

expressions to solve quadratic equations.

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35

Exercise:

Example 5

Solve $x^2 + 18x - 4 = 0$ by completing the square.**Lesson:**

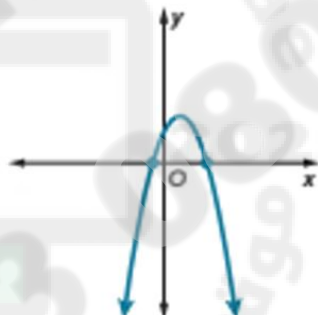
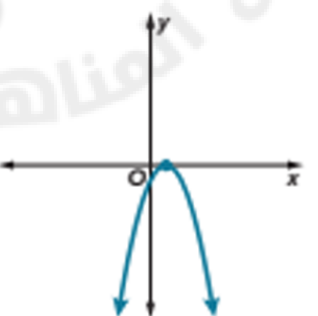
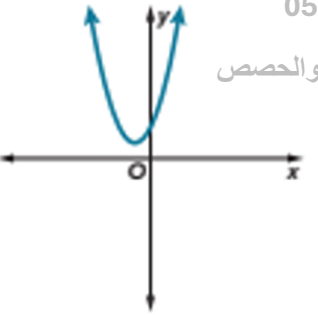
Determine the number and type of roots of a quadratic equation.

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Exercise:

Key Concept • Discriminant

Value of Discriminant	Type and Number of Roots	Example of Graph of Related Function
$b^2 - 4ac > 0$; $b^2 - 4ac$ is a perfect square.	2 real, rational roots	
$b^2 - 4ac > 0$; $b^2 - 4ac$ is not a perfect square.	2 real, irrational roots	
$b^2 - 4ac = 0$	1 real rational root	
$b^2 - 4ac < 0$	2 complex roots	

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If the discriminant > 0 , and it is perfect square , then there are

- a) 1 real rational root
- b) 2 complex roots
- c) 2 real irrational roots
- d) 2 real rational roots

If the discriminant < 0 , then there are

- a) 1 real rational root
- b) 2 complex roots
- c) 2 real irrational roots
- d) 2 real rational roots

If the discriminant $= 0$, then there are

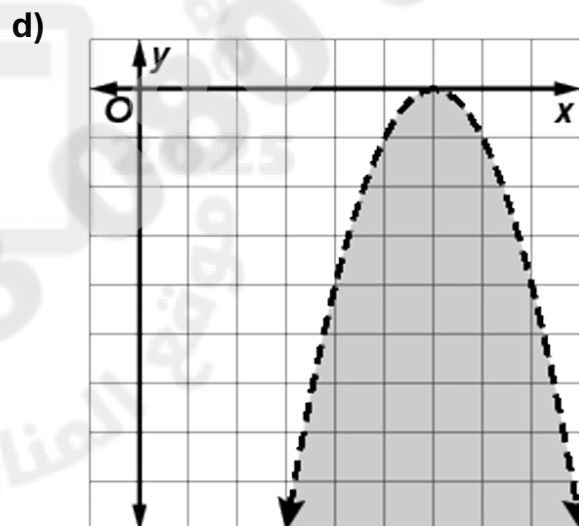
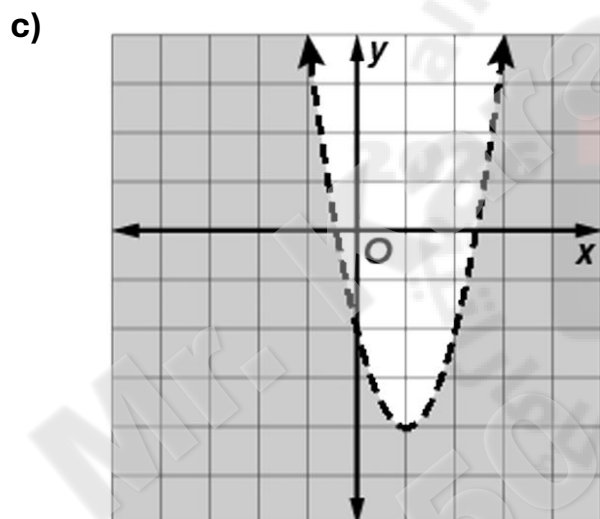
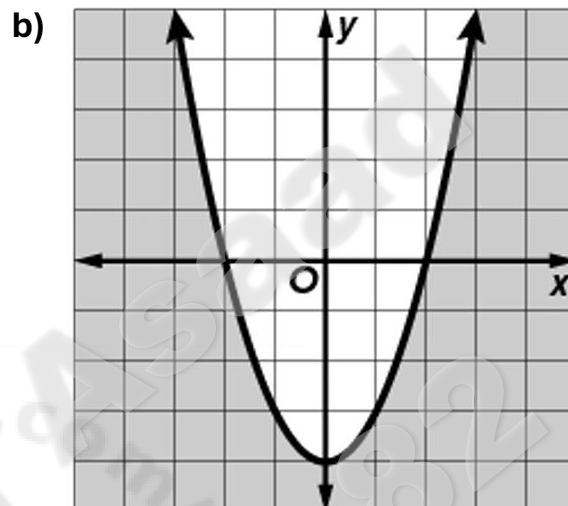
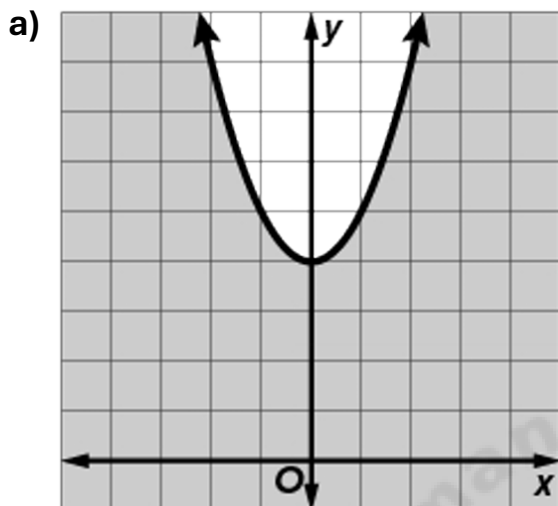
- a) 1 real rational root
- b) 2 complex roots
- c) 2 real irrational roots
- d) 2 real rational roots

If the discriminant > 0 , and it is not perfect square , then there are

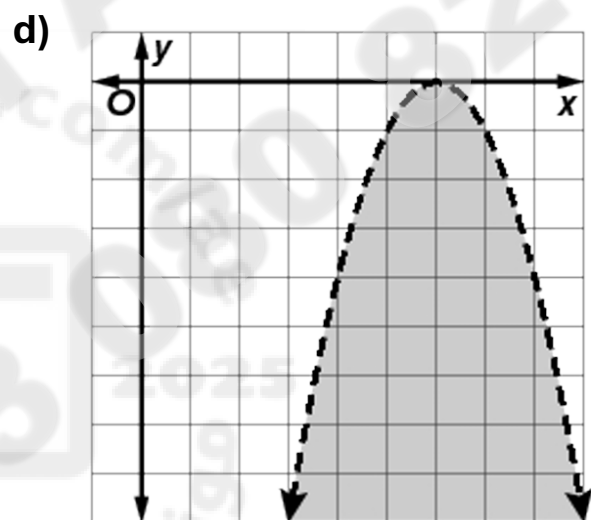
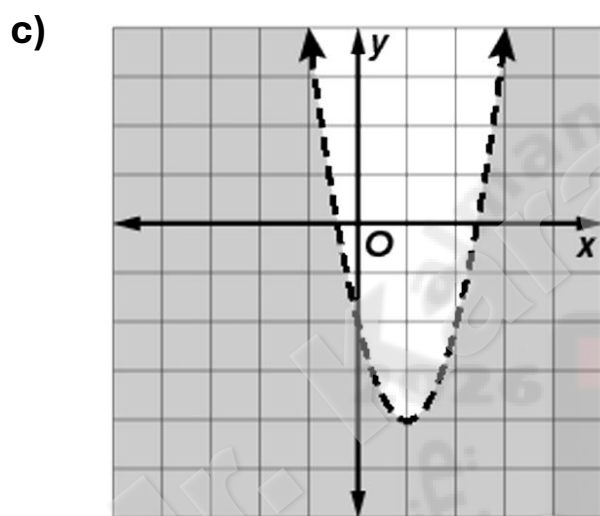
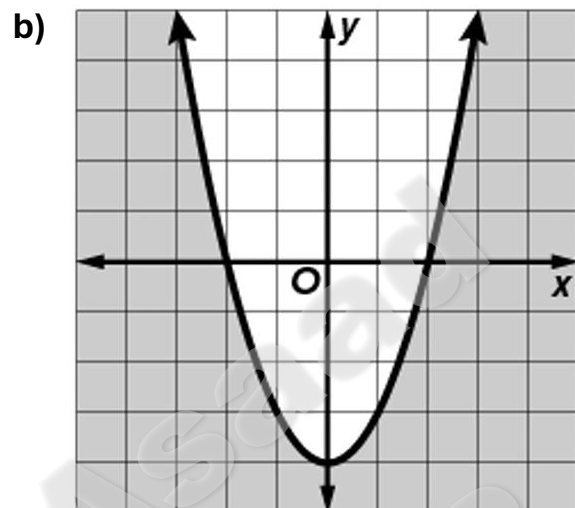
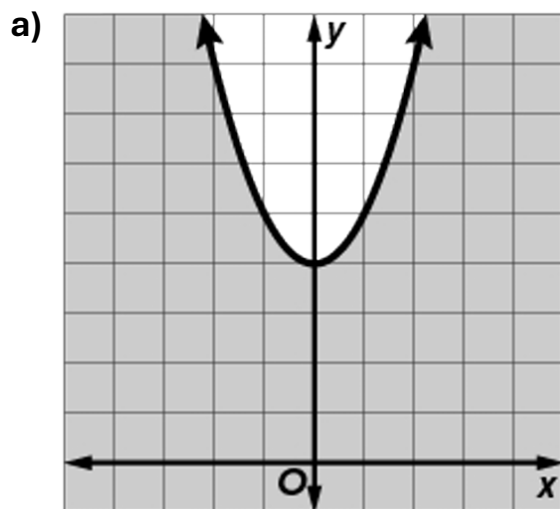
- a) 1 real rational root
- b) 2 complex roots
- c) 2 real irrational roots
- d) 2 real rational roots

Graph each inequality.

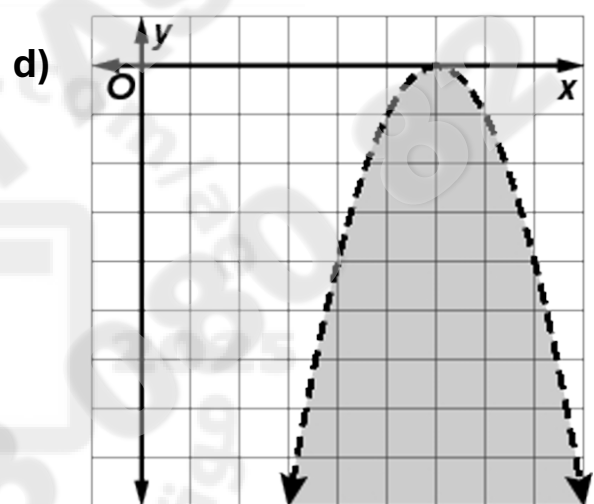
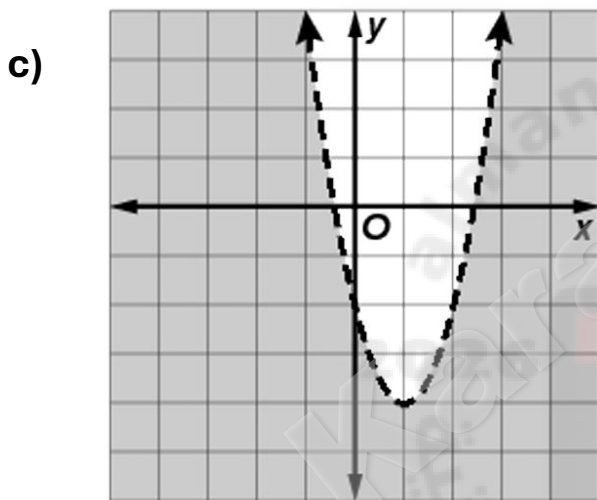
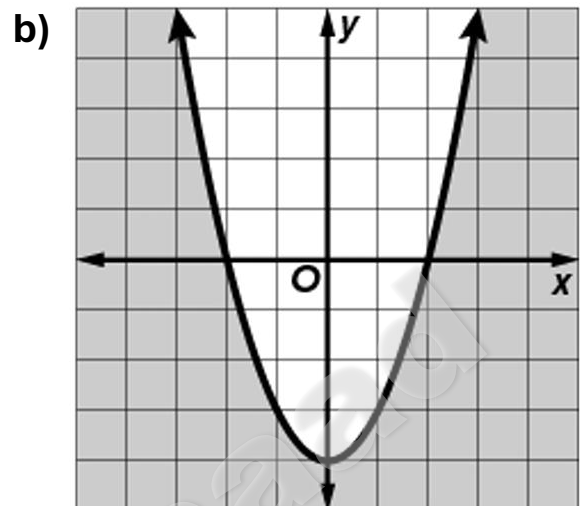
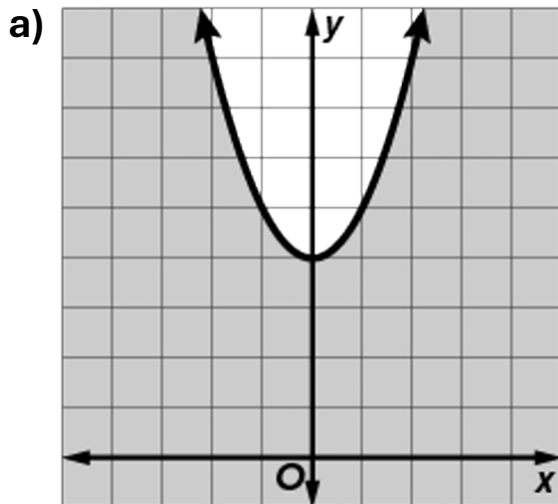
4. $y \leq x^2 + 4$



$$5. y < 2x^2 - 4x - 2$$



6. $-x^2 + 12x - 36 > y$



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Write a quadratic inequality for each graph.

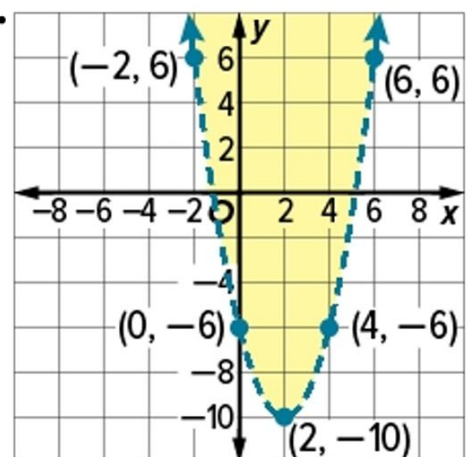
37.

a) $y \leq -x^2 + 2x + 6$

b) $y > -0.25x^2 - 4x + 2$

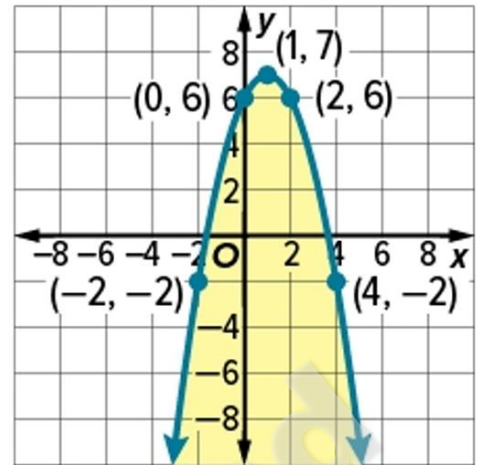
c) $y > x^2 - 4x - 6$

d) $y \leq -x^2 + 4$



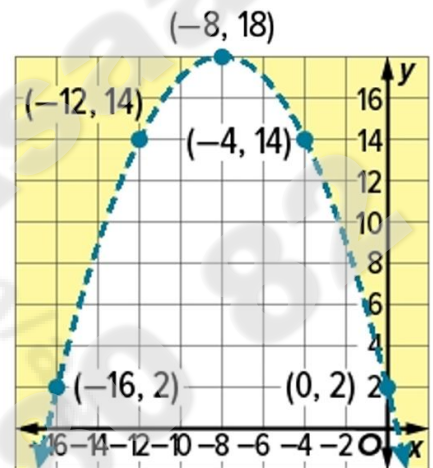
38.

- a) $y \leq -x^2 + 2x + 6$
- b) $y > -0.25x^2 - 4x + 2$
- c) $y > x^2 - 4x - 6$
- d) $y \leq -x^2 + 4$



39)

- a) $y \leq -x^2 + 2x + 6$
- b) $y > -0.25x^2 - 4x + 2$
- c) $y > x^2 - 4x - 6$
- d) $y \leq -x^2 + 4$



Lesson:

Graph and analyze polynomial functions.

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Exercise:

Example 3

State the degree and leading coefficient of each polynomial in one variable. If it is not a polynomial in one variable, explain why.

- a. $2x^4 - 3x^3 - 4x^2 - 5x + 6a$
- b. $7x^3 - 2$
- c. $4x^2 - 2xy + 8y^2$
- d. $x^5 + 12x^4 - 3x^3 + 2x^2 + 8x + 4$

Use the graph to state the number of real zeros of the function.

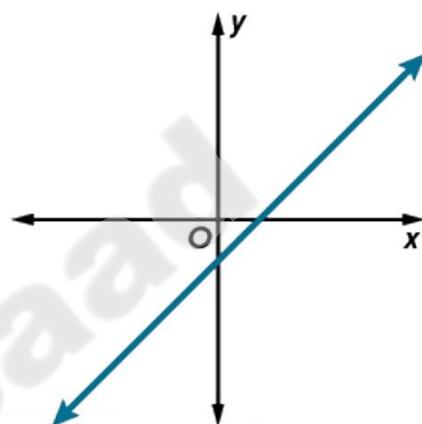
15.

a) 0

b) 1

c) 2

d) 3



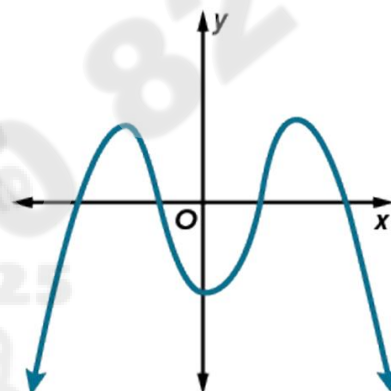
16.

a) 1

b) 2

c) 3

d) 4



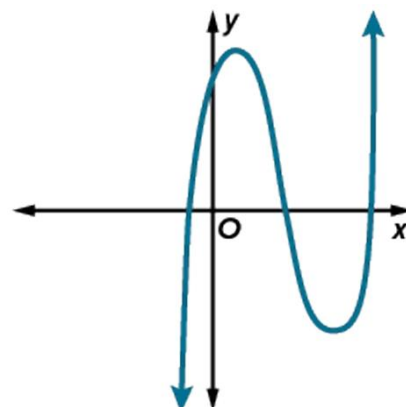
19.

a) 1

b) 2

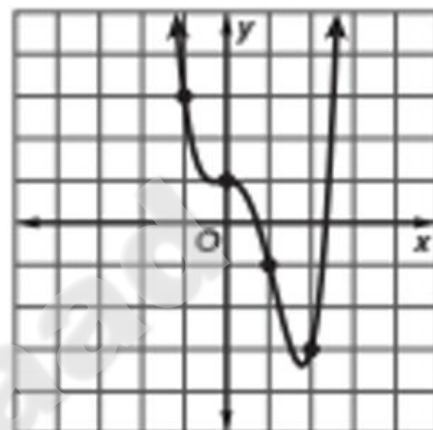
c) 3

d) 4



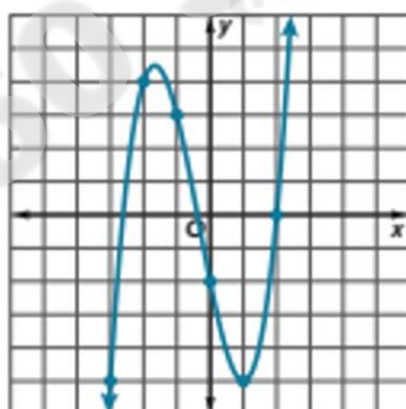
Determine the consecutive integer values of x between which each real zero of $f(x) = x^4 - 2x^3 - x^2 + 1$ is located. Then draw the graph.

- a) between $x = 0$ and $x = 1$ and between $x = 2$ and $x = 3$
 b) between $x = 0$ and $x = 1$ and between $x = 3$ and $x = 4$
 c) between $x = 0$ and $x = -1$ and between $x = -2$ and $x = -3$
 d) between $x = 1$ and $x = 2$



Use a table to graph $f(x) = x^3 + x^2 - 5x - 2$. Estimate the x -coordinates at which the relative maxima and relative minima occur.

x	$f(x)$
-4	-30
-3	-5
-2	4
-1	3
0	-2
1	-5
2	0
3	19



- a) maximum near $x = -2$
 and minimum near $x = 1$
 b) maximum near $x = -4$
 and minimum near $x = 2$

Lesson:

Add and subtract polynomials.

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Exercise:

Example 2 & Example 3

Find $(6x^3 + 7x^2 - 2x + 5) + (x^3 - 4x^2 - 8x + 1)$.

Find $(2x^3 + 9x^2 + 6x - 3) + (4x^3 - 7x^2 + 5x)$.

Find $(2x^5 + 11x^4 + 7x - 8) - (5x^4 + 9x^3 - 3x + 4)$.

Find $(8x^2 - 3x + 1) - (5x^3 + 2x^2 - 6x - 9)$.

Lesson:

Multiply polynomials.

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Exercise:

(16-26)

Multiply. 16. $x^2(2x + 9)$

a) $3x^2 + 4x - 5$

b) $2x^3 + 9x^2$

c) $-3x + 3$

$$17. (a - 5)^2$$

$$\text{a) } 2a^2 - a - 2$$

$$\text{b) } 3a^2 + 2a - 1$$

$$a^2 - 10a + 25$$

$$18. (2x - 3)(3x - 5)$$

$$19. (x - y)(x^2 + 2xy + y^2)$$

$$21. (x - y)(x + y)(2x + y)$$

$$23. (r - 2t)(r + 2t)$$

$$25. (x^3 - 3x^2 + 1)(2x^2 - x + 2)$$

$$26. (4x^5 + x^3 - 7x^2 + 2)(3x - 1)$$

Find $(24a^4b^3 + 18a^2b^2 - 30ab^3)(6ab)^{-1}$.

a) $4a^3b^2 + 3ab - 5b^2$

b) $-a^2b + a - \frac{2}{a}$

Find $(x^2 - 5x - 36) \div (x + 4)$.

a) $2x^2 - 3x + 1$

b) $x - 9$

Find $\frac{3z^3 - 14z^2 - 7z + 3}{z - 5}$.

a) $3z^2 + z - 2 - \frac{7}{z - 5}$

b) $3z^4 - z^3 + 2z^2 - 4z + 9 - \frac{13}{z + 2}$

Lesson:

Solve polynomial equations by writing them in quadratic form and factoring.

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126 & 128

Exercise:

Example 6 , Example 7 & (16-27)

Write each expression in quadratic form, if possible.

a. $4x^{20} + 6x^{10} + 15$

b. $18x^4 + 180x^8 - 28$

c. $9x^6 - 4x^2 - 12$

Solve $8x^4 + 10x^2 - 12 = 0$.

a) $\frac{\sqrt{3}}{2}, -\frac{\sqrt{3}}{2}, i\sqrt{2},$ and $-i\sqrt{2}.$

b) $\sqrt{2}, -\sqrt{2}, i\frac{\sqrt{3}}{2},$ and $-i\frac{\sqrt{3}}{2}.$

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Write each expression in quadratic form, if possible.

16. $x^4 + 12x^2 - 8$

a) $-15(x^2)^2 + 18(x^2) - 4$

b) $(x^2)^2 + 12(x^2) - 8$

$$17. -15x^4 + 18x^2 - 4$$

$$\text{a) } -15(x^2)^2 + 18(x^2) - 4$$

$$\text{b) } 2(2x^3)^2 + 3(2x^3) + 7$$

$$18. 8x^6 + 6x^3 + 7$$

$$\text{a) } -15(x^2)^2 + 18(x^2) - 4$$

$$\text{b) } 2(2x^3)^2 + 3(2x^3) + 7$$

$$19. 5x^6 - 2x^2 + 8$$

$$\text{a) not possible}$$

$$\text{b) } (x^2)^2 + 12(x^2) - 8$$

$$20. 9x^8 - 21x^4 + 12$$

$$\text{a) } (3x^4)^2 - 7(3x^4) + 12$$

$$\text{b) } 4(2x^5)^2 + 1(2x^5) + 6$$

$$21. 16x^{10} + 2x^5 + 6$$

$$\text{a) } (3x^4)^2 - 7(3x^4) + 12$$

$$\text{b) } 4(2x^5)^2 + 1(2x^5) + 6$$

Solve each equation.

$$22. x^4 + 6x^2 + 5 = 0$$

$$\text{a) } \pm i\sqrt{5}, \pm i$$

$$\text{b) } \pm\sqrt{5}, \pm i\sqrt{2}$$

$$\text{c) } \pm\sqrt{2}, \pm\frac{\sqrt{3}}{2}$$

$$23. x^4 - 3x^2 - 10 = 0$$

a) $\pm i\sqrt{5}, \pm i$

b) $\pm\sqrt{5}, \pm i\sqrt{2}$

c) $\pm\sqrt{2}, \pm \frac{\sqrt{3}}{2}$

$$24. 4x^4 - 14x^2 + 12 = 0$$

a) $\pm i\sqrt{5}, \pm i$

b) $\pm\sqrt{5}, \pm i\sqrt{2}$

c) $\pm\sqrt{2}, \pm \frac{\sqrt{3}}{2}$

Lesson:

Graph exponential growth functions.

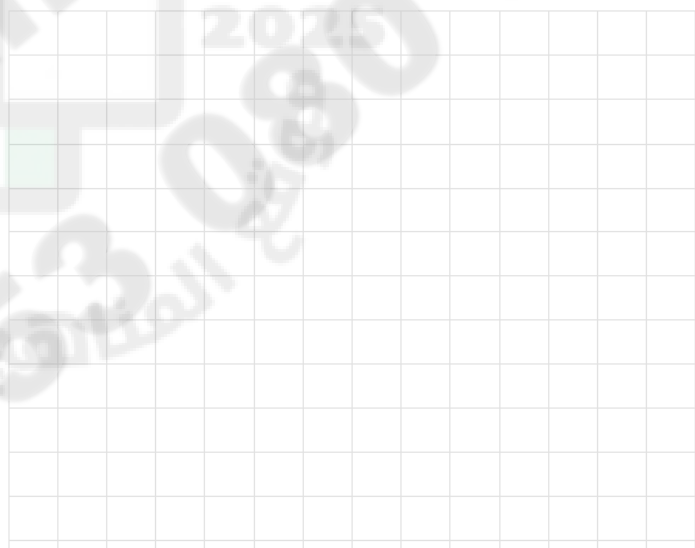
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217 & 218

Exercise:

Example 1 & 2

Graph $f(x) = 2^x$. Find the domain, range, y-intercept, asymptote, and end behavior.



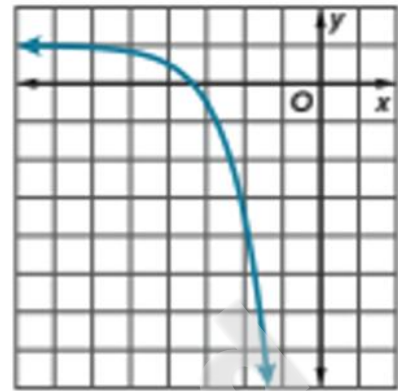
Graph $g(x) = -\frac{1}{2} \cdot 3^{x+4} + 1$.

Transform the graph of $g(x) = 3^x$.

$a = -\frac{1}{2}$; Reflect in the x-axis and compress vertically.

$h = -4$; Translate 4 units left.

$k = 1$; Translate 1 unit up.



Lesson:

Graph exponential decay functions.

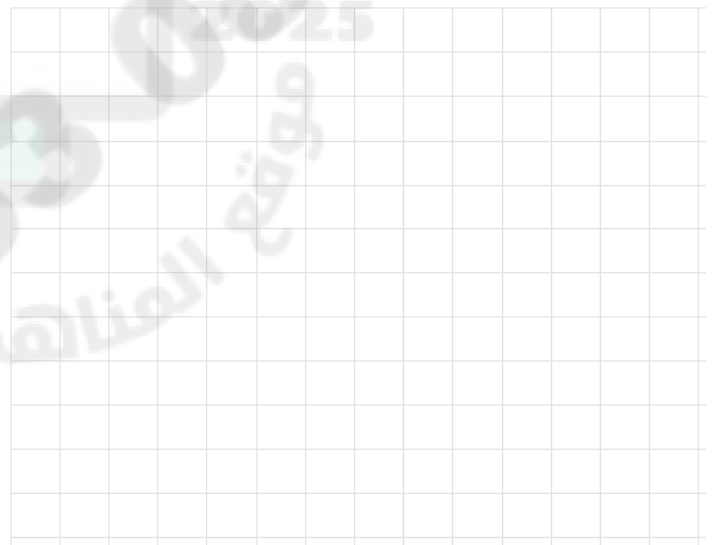
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Exercise:

Example 6 & 7

Graph $f(x) = \left(\frac{1}{2}\right)^x$. Find the domain, range, y-intercept, asymptote, and end behavior.



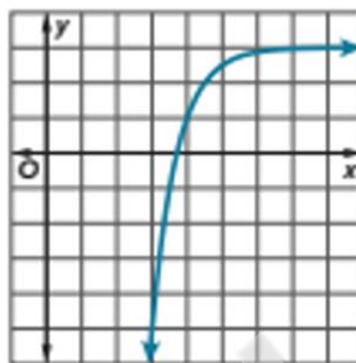
Graph $g(x) = -2\left(\frac{1}{4}\right)^{x-4} + 3$.

$g(x)$ is a transformation of $f(x) = \left(\frac{1}{4}\right)^x$.

$a = -2$; Reflect in the x -axis and stretch vertically.

$h = 4$; Translate 4 units right.

$k = 3$; Translate 3 units up.



Lesson:

Distinguish among sample surveys, experiments, and observational studies.

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373 & 376

Exercise:

Example 4 & (11-14)

UNIFORMS 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.

Determine whether each situation describes a *survey*, an *experiment*, or an *observational study*. Then identify the sample, and suggest a population from which it may have been selected.

11. An Internet service provider conducts an online study in which customers are randomly selected and asked to provide feedback on their customer service.

ANSWER:

survey; sample: customers that take the online survey; population: all customers

12. A research group randomly selects 100 business owners, half of whom started their own businesses, and compares their success.

ANSWER:

observational study; sample: the 100 business owners selected; population: all business owners

13. A research group randomly chooses 50 people to participate in a study to determine whether exercising regularly reduces the risk of diabetes in adults.

ANSWER:

experiment; sample: the 50 adults participating in the study; population: all adults

14. An online video streaming service mails a questionnaire to randomly selected people across the country to determine whether they prefer streaming movies or sports.

ANSWER:

survey; sample: people that receive the questionnaire; population: all online video streaming viewers

Classify sampling methods and identify bias in samples and survey questions.

372 & 375

Example 3 & (7-10)

FOOD A restaurant owner wants to determine which kinds of meals she should add to her menu: vegetarian options or more traditional meat-based dishes. She releases a survey to her customers asking the following question: *Do you prefer a plain salad or a delicious steak?* Identify any bias in the question.

Step 1 Identify the purpose of the question. The purpose is to determine which dishes are most popular with customers.

Step 2 Identify the bias in the sample. The question provides descriptions of each kind of food, and the description for the steak favors it over the salad.

Identify each sample or question as *biased* or *unbiased*. Explain your reasoning.

7. Do you think that the workout facility needs a new treadmill and racquetball court?

ANSWER:

biased; Sample answer: The question is asking about two issues: whether the workout facility needs a new treadmill and whether the workout facility needs a new racquetball court.

8. Which is your favorite type of music, pop, or country?

ANSWER:

biased; Sample answer: The question only gives two options, and thus encourages a certain response.

9. Are you a member of any after-school clubs?

ANSWER:

unbiased; Sample answer: The question does not influence participants.

10. Don't you agree that employees should pack their lunch?

ANSWER:

biased; Sample answer: The question encourages a certain response. The phrase “don't you agree” suggests that the people surveyed should agree.

Lesson:

Analyse normally distributed variables
by using the Empirical Rule.

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Exercise:

Key Concept • The Empirical Rule

Learn Normal Distributions

The **normal distribution** is the most common continuous probability distribution of a random variable. A normal distribution occurs as a sample size increases due to the Law of Large Numbers.

Key Concept • Law of Large Numbers

As the number of trials increases, the experimental probability approaches the theoretical probability.

Key Concept • The Normal Distribution

- The graph of a normal distribution is continuous, bell-shaped, and symmetric with respect to the mean.
- The mean, median, and mode are equal and located at the center.
- The curve approaches, but never touches, the x-axis.
- The total area under the curve is equal to 1, or 100%.

The area under the normal curve represents the amount of data within a certain interval, which can be used to determine the probability that a random data value falls within that interval. This area is defined in relation to the mean and standard deviation of the data.

When a set of data is normally distributed, or approximately normal, the Empirical Rule can be used.

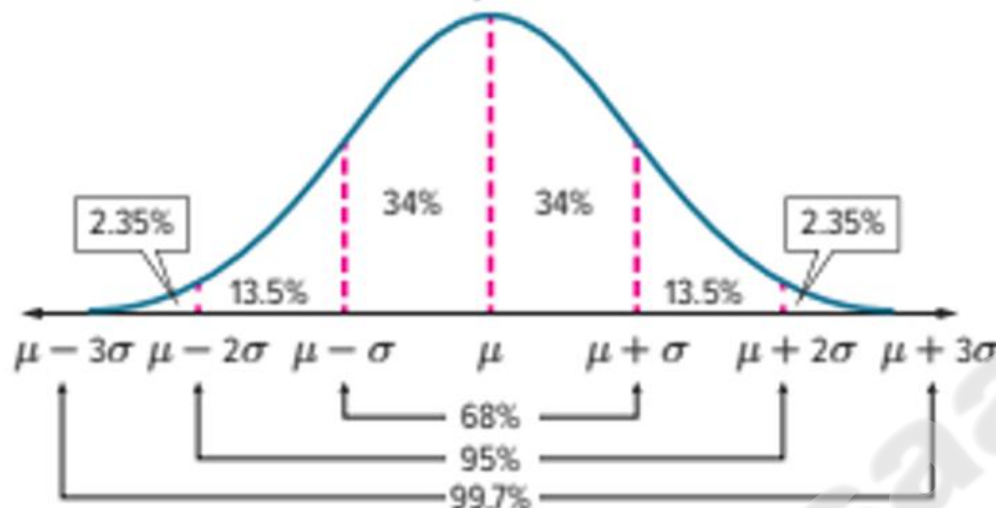
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يمكنكم التواصل لحجز المواعيد والحصص

أ / كرم أسعد

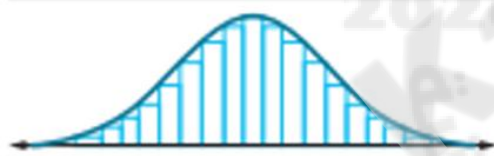
Key Concept • The Empirical Rule

In a normal distribution with mean μ and standard deviation σ ,



- approximately 68% of the data fall within 1σ of the mean,
- approximately 95% of the data fall within 2σ of the mean, and
- approximately 99.7% of the data fall within 3σ of the mean.

When a set of data is *not* approximately normal, it cannot be represented by the Empirical Rule. Skewed data is one example of a set of data that is not approximately normal.



The data are normally distributed, symmetric about the mean, and bell-shaped.



The data are approximately normally distributed. The data can be modeled by the normal distribution.



The data are skewed to the left. A normal curve would not be the best curve to model the distribution.

Second: free response questions ثانيا الاسئلة الكتابية

Lesson:

Page:

Exercise:

Solve quadratic equations by using
the Quadratic Formula.

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(1-6,12,13)

Solve each equation by using the Quadratic Formula.

1. $x^2 + 8x + 15 = 0$

2. $x^2 - 18x + 72 = 0$

3. $12x^2 - 22x + 6 = 0$

4. $4x^2 - 6x = -2$

$$5. x^2 + 8x + 5 = 0$$

$$6. -8x^2 + 4x = -5$$

$$12. x^2 + x - 8 = 0$$

$$13. 8x^2 + 5x - 1 = 0$$

Lesson:

Divide polynomials by using synthetic division.

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Exercise:

Example 4 & 5

Example 4 Use Synthetic Division

Find $(3x^3 - 2x^2 - 53x - 60) \div (x + 3)$.

Example 5 Divisor with a Coefficient Other Than 1

Find $\frac{4x^4 - 37x^2 + 4x + 9}{2x - 1}$.

Lesson:

Solve polynomial equations by factoring.

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Exercise:

(1-10)

Factor completely. If the polynomial is not factorable, write *prime*.

1. $8c^3 - 27d^3$

2. $64x^4 + xy^3$

3. $a^8 - a^2b^6$

4. $x^6y^3 + y^9$

5. $18x^6 + 5y^6$

6. $w^3 - 2y^3$

$$7. gx^2 - 3hx^2 - 6fy^2 - gy^2 + 6fx^2 + 3hy^2$$

$$8. 12ax^2 - 20cy^2 - 18bx^2 - 10ay^2 + 15by^2 + 24cx^2$$

$$9. a^3x^2 - 16a^3x + 64a^3 - b^3x^2 + 16b^3x - 64b^3$$

$$10. 8x^5 - 25y^3 + 80x^4 - x^2y^3 + 200x^3 - 10xy^3$$

Solve each equation.

1. $25^{2x+3} = 25^{5x-9}$

2. $9^{8x-4} = 81^{2x+6}$

3. $4^{x-5} = 16^{2x-31}$

4. $4^{3x-3} = 8^{4x-4}$

5. $9^{-x+5} = 27^{6x-10}$

6. $125^{3x-4} = 25^{4x+2}$

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 أ / كرم أسعد

Example 8 Find Area Under the Standard Normal Curve by Using a Calculator

INTERNET TRAFFIC The number of daily hits to a local news Web site is normally distributed with $\mu = 98,452$ hits and $\sigma = 10,325$ hits.

Find the probability that the Web site will get at least 100,000 hits on a given day, $P(X > 100,000)$.

Step 1 Find the corresponding z-value for $X = 100,000$.

$$z = \frac{X - \mu}{\sigma}$$

Formula for z-value

$$z = \frac{100,000 - 98,452}{10,325}$$

$X = 100,000$, $\mu = 98,452$, and $\sigma = 10,325$

$$z \approx 0.150$$

Simplify.

Step 2 Find the probability.

The area under the curve when $z > 4$ is negligible.

So $z = 4$ can be used as an upper bound for finding area. You can use a graphing calculator to find the area between $z = 0.150$ and $z = 4$.

Press **2nd** **[DISTR]** and select **normalcdf**. Enter the interval and press **enter** to display the area.

normalcdf(0.150,
4)
.4403506019

The area is 0.44. Therefore, the probability of the Web site getting at least 100,000 hits in one day is 44.0%.

14. **TESTING** The scores on a test administered to prospective employees are normally distributed with a mean of 100 and a standard deviation of 12.3.
- a. What percent of the scores are between 70 and 80?
 - b. What percent of the scores are over 115?
 - c. If 75 people take the test, how many would you expect to score lower than 75?

ANSWER:

- a. 4.5%
- b. 11.1%
- c. 2

مع اطيب امنياتي بالنجاح والتفوق للجميع

أ / كرم اسعد