

شرح وحل مسائل كتابة وحل المعادلات بمتغيرات في الطرفين



تم تحميل هذا الملف من موقع المناهج الإماراتية

موقع المناهج ⇨ المناهج الإماراتية ⇨ الصف الثامن ⇨ رياضيات ⇨ الفصل الأول ⇨ ملفات متنوعة ⇨ الملف

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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: نورا سيف

التواصل الاجتماعي بحسب الصف الثامن



صفحة المناهج
الإماراتية على
فيسبوك

الرياضيات

اللغة الانجليزية

اللغة العربية

التربية الاسلامية

المواد على تلغرام

المزيد من الملفات بحسب الصف الثامن والمادة رياضيات في الفصل الأول

هيكمل مراجعة (بدون حل) منهج عربي

1

هيكمل مراجعة (محلول) منهج عربي

2

تقدير الجذور التربيعية

3

تقدير الجذور التربيعية والتكعيبة

4

استخدام قوى العدد 10 لتقدير الكميات

5

تحميل تطبيق المناهج للهواتف الذكية

تطبيق المناهج على Play Google (أندرويد)

تطبيق المناهج على Store App (آبل)



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أقوى منصة تعليمية

معاً .. نحو مستقبل أفضل

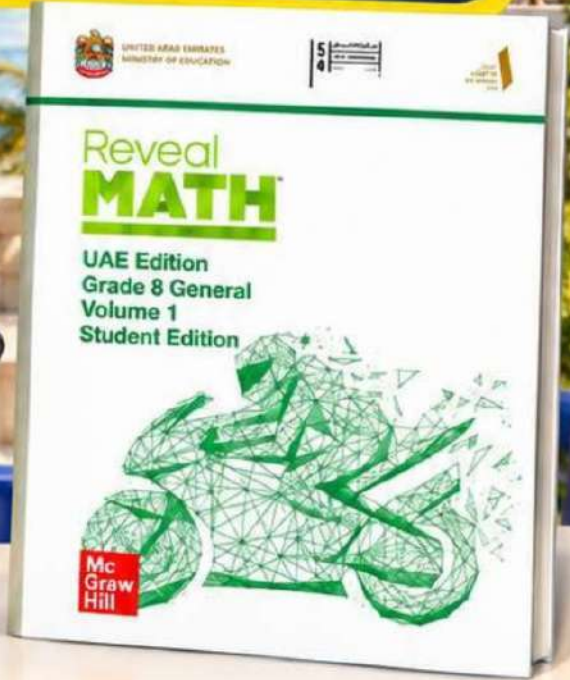


MATH G8

Lesson 2

Write and Solve Equations

with Variables in Each Side



الواتس اب QR



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معاً .. نصنع الفرق

Lesson 3-2

Write and Solve Equations with Variables on Each Side

تعال مُعنا نفهم
الفكره ببساطة!

1 I Can



I can write **linear equations** in **one variable** with rational coefficients and use the properties of equality to solve them.



2 Explore

You will explore how to write an equation with **variables on each side** to solve a real-world problem.



3 Learn

We can use **equations** to **compare** two plans.

- **Plan A:** \$25 initial fee + \$0.99 per song
- **Plan B:** \$10 initial fee + \$1.50 per song
- **Question:** For how many songs will the two plans cost the **same**?

الآن وصلنا إلى
المعادلة الأساسية

Words

a fee of \$25 plus \$0.99 per song
is the same as
a fee of \$10 plus \$1.50 per song

Variable

Let **s** represent the number of songs.

Equation

$$25 + 0.99s = 10 + 1.50s$$



4 Try It

What does **s** represent?





5 قيم فهمك

- 1 In the equation $25 + 0.99s = 10 + 1.50s$, what does **s** represent?

- (A) fee
(B) number of songs
(C) dollars
(D) months

- 2 Which plan has the larger initial fee?

- (A) Plan A
(B) Plan B
(C) Both equal
(D) Cannot tell

- 3 Why do we write an equation here?

- (A) To decorate the page
(B) To compare the two costs
(C) To draw a graph only
(D) To change the units

اختر الإجابة الصحيحة:

تواصل وات



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Lesson 3-2

Example 1 – Write and Solve Equations with Variables on Each Side

هيا نحل المثال خطوة خطوة!

1 Think About It

What is the unknown in this problem?



2 Read and Understand

Green's Gym charges a one-time application fee of \$50 plus \$30 per session for a personal trainer.

Breakout Gym charges an annual fee of \$250 plus \$10 for each session with a trainer.

For how many sessions is the cost of the two plans the same? Write and solve an equation to represent this problem. Check your solution.



3 Part A Write an Equation

Let s represent the number of personal trainer sessions.

Write an equation that models when the cost of the two plans are equal to each other.

Green's Gym

$$50 + 30s$$

Breakout Gym

$$250 + 10s$$

Equation

$$50 + 30s = 250 + 10s$$



4 Part B Solve the Equation

$$50 + 30s = 250 + 10s$$

$$- 10s \quad - 10s$$

$$50 + 20s = 250$$

$$- 50 \quad - 50$$

$$20s = 200$$

$$\frac{20s}{20} = \frac{200}{20}$$

$$s = 10$$

Write the equation.

Subtraction Property of Equality.

Simplify.

Subtraction Property of Equality.

Simplify.

Division Property of Equality.

Simplify.



5 Check the Solution

Green's Gym

$$50 + 30(10)$$

$$= 50 + 300$$

$$= 350$$

Breakout Gym

$$250 + 10(10)$$

$$= 250 + 100$$

$$= 350$$

So, the cost is the same for 10 personal trainer sessions.



6 Talk About It

Suppose a customer plans to have a personal training session once a month for one year. Which gym is more cost effective? Explain.



7 Try It

How many sessions will a customer have in one year? Which gym is more cost effective? Explain your answer.

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1 Check



جرب بنفسك



A container has 130 gallons of water and is being filled at a rate of $\frac{1}{4}$ gallon each second. Another container has 200 gallons of water and is draining at a rate of $\frac{1}{3}$ gallon each second.



Part A

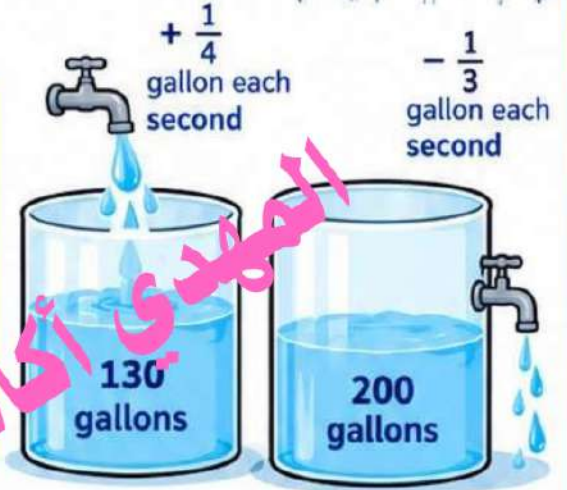
Which equation could be used to determine s , the number of seconds, when the two containers have the same amount of water?

(A) $130 + \frac{1}{3}s = 200 - \frac{1}{4}s$

(C) $200 + \frac{1}{3}s = 130 - \frac{1}{4}s$

(B) $130 + \frac{1}{4}s = 200 - \frac{1}{3}s$

(D) $4 + \frac{1}{130}s = 3 - \frac{1}{200}s$



Part B

After how many seconds will the two containers have the same amount of water?



2 Example 2

Write and Solve Equations with Variables on Each Side

Ryan's Rentals charges \$40 per day plus \$0.25 per mile. Road Trips charges \$25 per day plus \$0.45 per mile.

For what number of miles is the daily cost of renting a car the same? Write and solve an equation to represent this problem. Check your solution.



Part A

Let m represent the number of miles.

Ryan's Rentals

$$40 + 0.25m$$

Road Trips

$$25 + 0.45m$$

Equation:

$$40 + 0.25m = 25 + 0.45m$$



How would you begin solving the problem?

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المثال الثاني



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Example 2

Part B: Solve the equation

$$40 + 0.25m = 25 + 0.45m$$

$$- 0.25m \quad - 0.25m$$

$$40 = 25 + 0.20m$$

$$- 25 \quad - 25$$

$$15 = 0.20m$$

$$\frac{15}{0.20} = \frac{0.20m}{0.20}$$

$$75 = m$$

Write the equation.

Subtract 0.25m from both sides.

Simplify.

Subtract 25 from both sides.

Simplify.

Divide both sides by 0.20.

Simplify.

So, the cost is the same for 75 miles in one day.

الآن نكمل الحل!



Check the solution

Ryan's Rentals

$$40 + 0.25(75)$$

$$= 40 + 18.75$$

$$= 58.75$$

Road Trips

$$25 + 0.45(75)$$

$$= 25 + 33.75$$

$$= 58.75$$

Talk About It!

Which company is more cost effective to use if you plan to drive 50 miles in one day? 150 miles? Explain.



2 Check

Annie is comparing the cost to ship a package. One shipping company charges \$7 for the first pound and \$0.20 for each additional pound a package weighs. Another shipping company charges \$5 for the first pound and \$0.30 for each additional pound.



Part A

Which equation could be used to determine p , the number of pounds, when the costs for the two shipping companies are the same?

(A) $7 + 0.30p = 5 + 0.20p$

(B) $0.20 + 7p = 0.30 + 5p$

(C) $7 + 0.20p = 5 + 0.30p$

(D) $7 + 20p = 5 + 30p$



Part B

For how many pounds is the cost of the two shipping companies the same?

Answer:

pounds

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Apply

Home Improvement

تعالى معنا نفهم
خطوة خطوة

Suppose you are replacing the carpet in a living room where the length of the living room is five feet shorter than twice its width, w . Tack strip is placed around the perimeter of the room, which is equal to five times the width. If carpet costs \$2.99 a square foot, what is the total cost to carpet the living room?



1 What is the task?



Make sure you understand exactly what question to answer.
You may want to read the problem three times.

First Time Describe the context of the problem, in your own words.

Second Time What mathematics do you see in the problem?

Third Time What are you wondering about?



2 What do we know?

List the important information from the problem.

- Width of the room: _____
- Length of the room: _____
- Perimeter of the room: _____
- Cost per square foot: _____



3 How can you approach the task? What strategies can you use?

Think about what you can do to solve the problem. Write your ideas.



Talk About It!

How could you solve this problem another way?



4 What is your solution?

Use your strategy to solve the problem. Show your work.



5 How can you show your solution is reasonable?

Write About It! Write an argument that can be used to defend your solution.



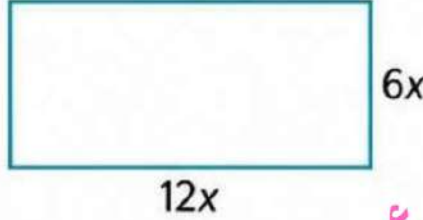


1 Check

جرب الحل بنفسك



A rectangular bathroom with the side lengths shown is being covered with tiles, where x is the length, in feet, of a square tile. The perimeter is equal to $48x - 6$. If each square foot of tile costs \$8.49, what is the total cost to tile the bathroom?



1 Write the perimeter equation.

2 Solve for x .

3 Find the area of the bathroom.

4 Find the total cost to tile the bathroom.



2 Pause and Reflect

كيف ستذاكر هذا الدرس؟

How will you study the concepts in today's lesson? Describe some steps you can take.



تواصل وات

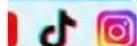
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Practice – Part 1

Write and solve an equation for each exercise.
Check your solution.

هيا بنا
نتدرب!

1

Marko has 45 comic books in his collection, and Tamara has 61 comic books. Marko buys 4 new comic books each month and Tamara buys 2 comic books each month. After how many months will Marko and Tamara have the same number of comic books?



Equation:

Answer:



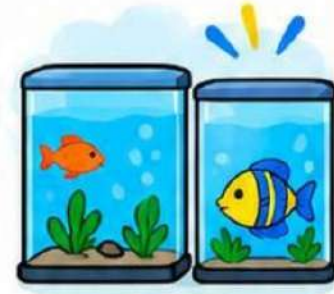
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A fish tank has 150 gallons of water and is being drained at a rate of $\frac{1}{2}$ gallon each second. A second fish tank has 120 gallons of water and is being filled at a rate of $\frac{1}{4}$ gallon each second. After how many seconds will the two fish tanks have the same amount of water?



Equation:

Answer:



3

Shipping Company A charges \$14 plus \$2.25 a pound to ship overnight packages. Shipping Company B charges \$20 plus \$1.50 a pound to ship an overnight package. For what weight is the charge the same for the two companies?



Equation:

Answer:



قيم فهمك


☐ I wrote an equation.

☐ I solved it.

☐ I checked my answer.

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Practice — Part 2

نكمل التدريب



4 Try It

A bicycle rental company charges a \$20 fee plus \$5.50 per hour to rent a bicycle. Another bicycle rental company charges a \$15 fee plus \$6.50 per hour to rent a bicycle. For what number of hours is the cost for the rental the same?

Equation:

Show Your Work:



Final Answer:

hours



5 Open Response

Deanna and Lulu are playing games at the arcade. Deanna starts with \$15, and the machine she is playing costs \$0.75 per game. Lulu starts with \$13, and her machine costs \$0.50 per game. After how many games will the two friends have the same amount of money remaining? Let g represent the number of games.

Equation:

Number of Games:



تواصل واتس



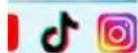
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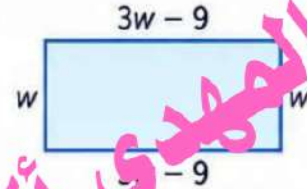
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Apply - Part 1

جرب استخدام
المعادلة أولاً!

6 Apply

Aiden is replacing the tile in a rectangular kitchen. The length of the kitchen is **nine feet shorter** than **three times** its width, w . The perimeter of the kitchen is **six times** the width. If tiles cost \$1.69 a square foot, what is the total cost to tile the kitchen?



1 Write the equation:

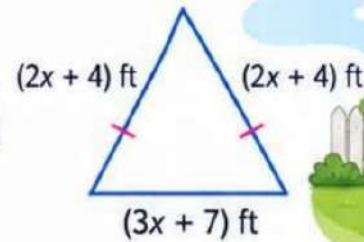
2 Solve for w :

3 Find the area of the kitchen:

4 Find the total cost:

7 Apply

Hailey is putting up a fence in the shape of an isosceles triangle in her backyard. The fence has side lengths as shown, where x represents the number of feet in each fence section. The perimeter of the fence can be covered using **8 equal fence sections** represented by the expression $8x$. If fencing costs \$6.50 a foot, what would be the total cost of the fence?



1 Write the equation:

2 Solve for x :

3 Find the total length of the fence:

4 Find the total cost:



Apply — Part 2

Solve Real-World Problems with Equations

طبق ما تعلمته في مواقف جديدة!



8 Create

Write a real-world problem that can be solved using the equation $9 + 4x = 21 - 2x$.



اكتب مسألة من الواقع يمكن حلها باستخدام المعادلة المعطاة.



9 Solve

Ling worked three more hours on Tuesday than she did on Monday. On Wednesday, she worked one hour more than twice the number of hours that she worked on Monday. The total number of hours is two more than five times the number of hours worked on Monday. Write and solve an equation to find the number of hours she worked on Monday.

اكتب المعادلة ثم حلها لإيجاد عدد الساعات في يوم الاثنين.



- Let the variable represent: _____
- Write the equation: _____
- Solve the equation: _____
- Number of hours on Monday: _____

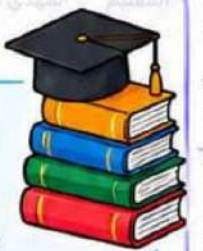
اكتشف الخطأ ثم صححه.



10 Find the Error

A student wrote the equation $22 + 4 = 6s + 12s$ to represent the problem shown at the right. Find his mistake and correct it.

Darnell and Emma are college students. Darnell currently has 22 credits and he plans on taking 6 credits per semester. Emma has 4 credits and plans to take 12 credits per semester. After how many semesters, s , will Darnell and Emma have the same number of credits?



Correct equation: _____

Number of semesters: _____

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