

MCMS
7th Grade
NTI Packet
Day 13

MCMS

7th Grade Math

NTI Day #13

Name _____ Date _____ Class _____

LESSON 4-4

Reteach

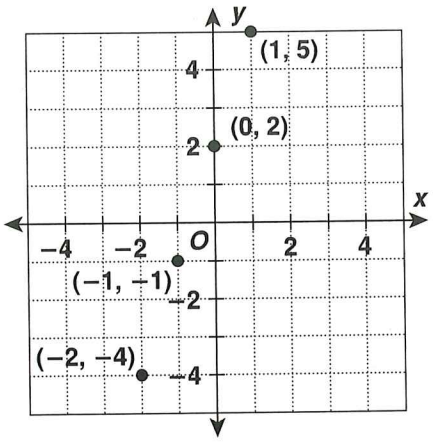
Functions, Tables, and Graphs

A **function** is a relationship in which the value of one quantity depends on the value of another quantity. A function can be represented by a rule or an equation. A *function table* can help you find the ordered pair values for a function.

Complete the missing values in the table.

	Input	Rule	Output	Ordered Pair
	x	$3x + 2$	y	(x, y)
1.	-2	$3(-2) + 2 = -6 + 2$		$(-2, -4)$
2.	-1	$3(\quad) + 2 = -3 + 2$	-1	$(\quad, -1)$
3.	0	$3(0) + 2 = \quad + 2$	2	$(\ , 2)$
4.	1	$3(1) + 2 = 3 + 2$		$(\ , \ )$

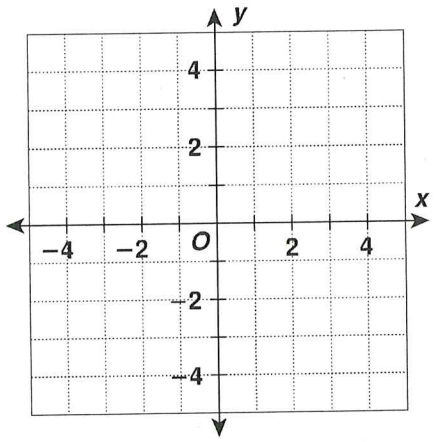
You can graph the resulting ordered pairs from the input/output table.



Find the output for each input value, and graph the resulting ordered pairs.

5. $y = 2x - 1$

Input	Rule	Output	Ordered Pair
x	$2x - 1$	y	(x, y)
-2			
-1			
0			
1			
2			



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Name _____ Date _____ Class _____

LESSON 4-4

Problem Solving

Functions, Tables, and Graphs

Write the correct answer.

1. Film passes through a projector at the rate of 24 frames per second. The equation $y = 24x$ describes the number of frames, y, that have passed over any number of seconds, x. Complete the function table.

Input	Rule	Output
x		*y*
2		48
3		72
4		96
5		120
6		144

2. Anne pays $40 a month for cable TV, plus $4 for each movie she watches on pay-per-view channels. Complete the function table, where x is the number of pay-per-view movies she watches each month and y is her monthly cable bill.

Input	Rule	Output
x		*y*
3		52
5		60
7		68
9		76
11		84

Choose the letter of the best answer.

Madeline has a discount coupon for $5 off her next purchase of tennis balls. Tennis balls are on sale for $3 per can. The equation $y = 3x - 5$ gives her final cost, y, to purchase x cans of tennis balls.

3. If $x = 3$, what is the value of y?
   A 15 **C** 9
   B 14 **D** 4

4. If $x = 5$, what is the value of y?
   F 25 **H** 10
   G 15 **J** 5

5. If $x = 10$, what is the value of y?
   A 25 **C** 35
   B 30 **D** 50

6. If $x = 4$, what is the value of y?
   F 5 **H** 12
   G 7 **J** 17

7. If $x = 9$, what is the ordered pair (x, y)?
   A (5, 9) **C** (9, 22)
   B (9, 5) **D** (9, 10)

8. If $x = 6$, what is the ordered pair (x, y)?
   F (6, 18) **H** (12, 31)
   G (6, 30) **J** (6, 13)

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Name Date Class

17th Science NTI 13 1 page

SECTION 1 Enrichment

Will Earth have another ice age?

Over millions of years, Earth has experienced many ice ages. During those times, vast ice caps covered Earth's poles, and glaciers dipped down across much of the land. What causes an ice age to begin and to end? Scientists have wondered about this for hundreds of years. Early twentieth century Serbian mathematician and physicist Milutin Milankovitch developed a theory after studying Earth's orbit and tilt. His theory consists of three factors that work together to cause ice ages.

Tilt and the Seasons

Milankovitch calculated that the tilt of Earth changes about every 41,000 years. The greater the tilt, the hotter the summers and the colder the winters. The smaller the tilt, the cooler the summers and more moderate the winters. When summers are cool, less snow melts near the poles. Over the years ice and snow build up. This marks the beginning of an ice age. Then, after thousands of years, summers become hot again. The snow and ice begin to melt, triggering the end of the ice age.

Milankovitch also used mathematics to explain how Earth's orbit changes. He showed that Earth's orbit is not always as round as it is today. Sometimes it is much more elliptical, or egg-shaped. The orbit changes from an ellipse to almost a circle and back again about every 100,000 years. When the orbit is elliptical, there are many times that the Earth is farther away from the Sun. At these times, Earth receives less sunlight and is cooler.

Earth's Wobble and Climate

Another characteristic of Earth is that it wobbles around its axis much like a spinning top. Although it is impossible to feel the wobble, it happens all the same. This wobbling motion also affects seasons and climate and happens in cycles of about 19,000 to 23,000 years.

Is an Ice Age Coming?

Milankovitch's ideas about the changes in Earth's orbit have received a lot of support from many experiments. Ice cores from Greenland show that concentrations of atmospheric gases have changed in timing cycles that were similar to the times Milankovitch suggested. Will we have another ice age soon? No one really knows what will happen. The only thing that is certain is that Earth's climate is influenced by its orbit and that the orbit will always change.

1. What might cause major changes in Earth's climate?

_____

2. Name at least three ways in which the position of Earth changes in space.

_____

_____

3. What information helps support Milankovitch's theory?

_____

4. Why do you think the three factors in Milankovitch's theory are called Milankovitch cycles?

_____

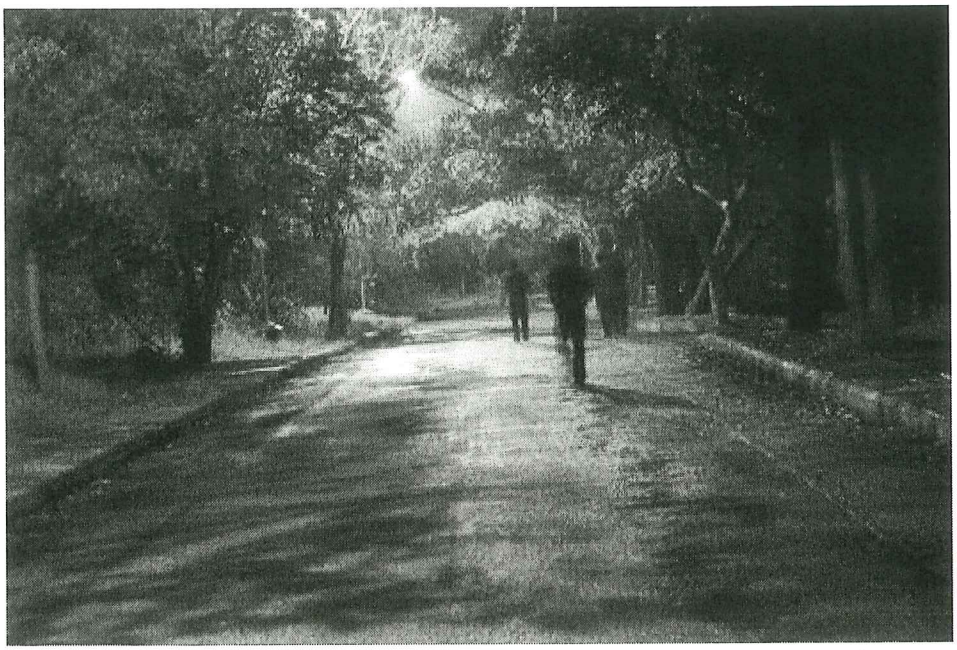
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Meeting Individual Needs

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Searching for Survivors [The Run Series, #3]

by ReadWorks



"Dennis! Dennis!" Mac sounded frantic. Dennis raced across the parking lot toward the gas station. "I'm coming, Mac!" he yelled to his friend, and burst into the store.

Mac was at the counter. When Dennis walked in, Mac pointed to the back of the store. The door of the men's bathroom was slowly creaking open. Just then the door swung wide, and a man appeared. The man's hair was matted and disheveled. His clothes were ripped and dirty. Parts of his skin were covered in deep purple and black marks. Even from the door, Dennis could detect the man's stench. He smelled like the fermented slop that they fed to pigs on the ranch. It was obvious that the plague had gotten this man.

The man hovered in the doorway of the bathroom, looking first at Mac and then at Dennis. His eyes were red and bloodshot, and they rolled around in his sockets, unable to focus. "Argghhh," the man growled. Drool dripped down his chin as he stepped forward.

"Mac," said Dennis quietly, backing toward the front door. "Let's get out of here."

Mac began edging toward the door, too, taking the bags of food and supplies with him. Suddenly, the crazed man lurched forward and started running toward the two younger men. Thinking quickly, Dennis reached out to the shelves of soup behind him. He threw the cans at the man as hard as he could. Back when he and Mac lived on the ranch, Dennis used to throw stones to scare off the coyotes. He had a strong throwing arm and good aim.

One of the cans hit the crazed man square in the face, and he crumpled to the ground.

"Don't go near the body," said Dennis. "We don't know if he's contagious."

"Don't worry. I'm not going anywhere near it," said Mac. "Let's get out of here." They turned to exit when they heard another slow creak. Mac and Dennis paused. There was still someone else in the gas station. They turned around and saw that now the door to the women's bathroom was opening. Dennis picked up more cans and handed a few to Mac. They watched the door and readied themselves to throw the cans as soon as a target came into view.

"Hello?" A young boy stuck his head out from the bathroom. He couldn't have been more than six or seven years old. "Is it safe?" he asked.

Mac and Dennis looked at the boy. He seemed healthy but scared.

"How long have you been in there?" asked Mac.

"A day or two," said the boy. "I locked myself in. I saw a group of people coming; they looked dangerous. So I hid. There's no one else around anymore."

Dennis and Mac exchanged a look. They couldn't leave this kid here alone to fend for himself. He wouldn't last a week.

"Grab some supplies, and come with us," said Dennis. "We're looking for other survivors."

The boy followed the two young men to the truck and climbed between them. As they drove, Dennis and Mac learned that the boy's name was Jeremiah. His parents had worked in one of the big hospitals in the city. When the plague hit, they had volunteered to help nurse the first victims. His parents had never come home. Jeremiah had waited a week and then tried to go to the hospital. No one was there. The entire building was abandoned and vacant.

"I don't know what happened to them," said Jeremiah. "So I left the city on my bike. I rode and rode until I came to the gas station. I thought I was safe until a new group of plagued people showed up."

Dennis and Mac nodded. Who knew how many families had been ripped apart by the plague? The important thing now was figuring out their next step. Dennis told Mac that he had heard the voice of a girl on the radio. "Her name was Anna, and she was the last one alive in her town, Sunnydale. She was on her father's radio kit, looking for others," said Dennis.

Mac looked at Dennis. "We're going to Sunnydale, aren't we?" he asked. Dennis nodded.

"And then?" asked Jeremiah.

Mac cleared his throat. He had an idea. Mac pointed out that it was too dangerous to go to the cities and that they only had enough gas to drive another four hundred miles. The safest thing to do would be to go somewhere rural. They should head to a place where they could set up a strong defense. Then they could wait out the plague for a few more weeks before trying to find other survivors.

Dennis thought about Mac's plan. It made sense. "Okay," he said. "But we look for Anna first. We might be her only chance at survival." In his head, Dennis could still hear the girl's voice and her sobbing as she made her radio broadcast.

The sun was setting when the truck pulled onto the main street of Sunnydale. "How will we find her?"

served.

asked Mac. "We can't just knock on every door in this town."

Dennis was fiddling with the radio again. "Let's see if we can hear her," he said. "Maybe she'll say her address." The static cleared, and there again was Anna's voice. She was still broadcasting.

"Is anyone there? Anyone liste-"

Suddenly, Anna's voice stopped. The young men heard a pounding on the door in the background. There was a crash and then sounds of a struggle. Dennis gripped the wheel so hard that his knuckles turned white. They were too late.

"Look!" cried Jeremiah. On the main street, the doors to one of the houses had opened. A teenaged girl was running out. She looked terrified, but not like the wild members of the swarm. Something else came out of the house, chasing her.

"Jump in the truck!" screamed Mac. The girl ran and leapt into the back of the truck, and Dennis hit the accelerator. There was a howl of frustration from the plagued person as his victim escaped.

"Uh-oh," said Jeremiah. "That doesn't look good."

He pointed to the girl's leg. The zombie had cut a long gash in her shin. The wound was already turning dark purple.

--

Ed.: *The tale continues in Part 4, "On the Road."*

Name: _____ **Date:** _____

1. Who walks out of the men's bathroom in the gas station?

A. a scared boy who is about six or seven years old

B. a terrified teenaged girl who has a wound in her leg

C. a man with red eyes, ripped clothes, and a bad smell

D. a nurse who volunteered to take care of plague victims at a hospital

2. What point of view is this story told from?

A. second person point of view

B. third person limited point of view

C. third person omniscient point of view

D. first person point of view

3. Read these sentences from the text.

"Mac was at the counter. When Dennis walked in, Mac pointed to the back of the store. The door of the men's bathroom was slowly creaking open. Just then the door swung wide, and a man appeared. The man's hair was matted and disheveled. His clothes were ripped and dirty. Parts of his skin were covered in deep purple and black marks. Even from the door, Dennis could detect the man's stench. He smelled like the fermented slop that they fed to pigs on the ranch. It was obvious that the plague had gotten this man."

Based on this evidence, what can you conclude about people who get the plague?

A. People who get the plague have to go to the bathroom more often than people who do not have the plague.

B. People who get the plague have short hair, wear long pants, and use a lot of deodorant.

C. People who get the plague develop purple and black marks and become smelly.

D. People who get the plague start to behave like pigs.

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4. Why might Dennis have thrown cans at the man running toward him and Mac?

A. Dennis thought the man was hungry and wanted to provide him with cans of soup.

B. Dennis thought the man was harmless and wanted to tease him by throwing cans at him.

C. Dennis thought the man was dangerous and wanted to protect himself and Mac.

D. Dennis thought the man was lost and wanted him to start walking in the opposite direction.

5. What is the main idea of this story?

A. A few young people try to stay safe from crazed plague victims.

B. Dennis and Mac meet a boy named Jeremiah at a gas station.

C. A man with ripped clothes and red eyes runs out of a bathroom toward Mac and Dennis.

D. A teenaged girl jumps into the back of a truck after being attacked by a zombie.

6. Read these sentences from the text.

"Mac was at the counter. When Dennis walked in, Mac pointed to the back of the store. The door of the men's bathroom was slowly creaking open. Just then the door swung wide, and a man appeared. The man's hair was matted and disheveled. His clothes were ripped and dirty. Parts of his skin were covered in deep purple and black marks. Even from the door, Dennis could detect the man's stench. He smelled like the fermented slop that they fed to pigs on the ranch. It was obvious that the plague had gotten this man."

Imagery is descriptive language that focuses on one or more of the five senses: sight, sound, touch, smell, and taste. What senses does the imagery in these sentences focus on?

A. sound, touch, and taste

B. sight, touch, and taste

C. touch, smell, and taste

D. sight, sound, and smell

7. Read these sentences from the text.

"Mac and Dennis looked at the boy. He seemed healthy but scared."

How could these sentences be combined without changing their meaning?

A. Mac and Dennis looked at the boy, which seemed healthy but scared.

B. Mac and Dennis looked at the boy, who seemed healthy but scared.

C. Mac and Dennis looked at the boy, although healthy but scared.

D. Mac and Dennis looked at the boy and seemed healthy but scared.

8. Whom or what is a teenaged girl running from at the end of the story?

9. What color does the wound on the girl's leg turn?

eserved.

10. Read these sentences from the text.

"Mac was at the counter. When Dennis walked in, Mac pointed to the back of the store. The door of the men's bathroom was slowly creaking open. Just then the door swung wide, and a man appeared. The man's hair was matted and disheveled. His clothes were ripped and dirty. Parts of his skin were covered in deep purple and black marks. Even from the door, Dennis could detect the man's stench. He smelled like the fermented slop that they fed to pigs on the ranch. It was obvious that the plague had gotten this man."

Based on these sentences and the color of the girl's wound at the end of the story, what might happen to the girl? Support your answer with evidence from the text.

_____

_____

_____

Malala Yousafzai

by ReadWorks



Photo Credit: DFID - UK Department for International Development (Malala Yousafzai: Education for girls), CC BY 2.0

Photograph of Malala Yousafzai

Malala Yousafzai was born on July 12, 1997, in Mingora, Pakistan. As a young child, Malala was exposed to the importance of education. Her father was in charge of running a local learning institution and instilled in Malala the value of attending school. Everything changed for Malala and her family when the Taliban began to have more authority in the Swat Valley region around 2007. The Taliban, a violent fundamental Islamist group, prohibited females from participating in many activities, including attending school. The Taliban were so committed to banning female access to education that they destroyed around 400 schools within two years of their control.

But Malala would not be deterred from her passion for learning. Not only did she continue to attend school, but she also spoke publicly about her dissent. On a Pakistani televised

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program, Malala was brave enough to express her disbelief; "How dare the Taliban take away my basic right to education?" Malala boldly proclaimed. Under the pseudonym 'Gul Makai,' she also began to blog about what it was like as a female under the Taliban's oppressive rule. Life became so dangerous for Malala and her family that they had to flee their home as a temporary safety measure. When they returned, Malala and her father started to become more vocal in opposition to the Taliban's sexist rules. Word started to spread about this father-daughter duo and Malala began to win awards for her bravery. The Taliban was extremely unhappy with Malala, and on October 9, 2012, a member of the Taliban shot Malala in the head.

Malala received immediate medical attention, and after multiple surgeries, she woke up from a coma. Miraculously, the trauma did not cause any permanent brain damage! As the story of her survival and bravery spread, Malala became an international icon and an education advocate. Since recovering from her wound, Malala has written a best-selling book and started a foundation for female empowerment. In October 2014, Malala won a much-deserved Nobel Peace Prize.



Photograph of the Obama family meeting with Malala

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Name: _____ Date: _____

1. Where was Malala Yousafzai born?

A. Afghanistan

B. India

C. Pakistan

D. Turkey

2. The text describes the sequence of important events in Malala Yousafzai's life. What happened on October 9, 2012?

A. Malala met President Obama and his family.

B. A member of the Taliban shot Malala in the head.

C. Malala left Pakistan with her family.

D. Malala won the Nobel Peace Prize.

3. Read the following sentences from the text.

"But Malala would not be deterred from her passion for learning. Not only did she continue to attend school, but she also spoke publicly about her dissent. On a Pakistani televised program, Malala was brave enough to express her disbelief; 'How dare the Taliban take away my basic right to education?' Malala boldly proclaimed. Under the pseudonym 'Gul Makai,' she also began to blog about what it was like as a female under the Taliban's oppressive rule."

Which conclusion about Malala does this information best support?

A. She is very kind but reserved.

B. She is very determined and outspoken.

C. She is very mysterious and troubled.

D. She is very creative but lazy.

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4. Why is the rule of the Taliban especially harmful to girls and women?

A. The Taliban stops females from having children of their own.

B. The Taliban violently forces females to get an education when they don't want one.

C. The Taliban stops females from participating in many activities, including getting an education.

D. The Taliban forces families to get rid of their female relatives.

5. What is the main idea of the text?

A. The Taliban, a violent fundamental Islamist group, prohibited females from participating in many activities, including attending school.

B. Malala Yousafzai risked her life to pursue an education and speak out against the Taliban's sexist rules, becoming an international icon and education advocate.

C. Malala Yousafzai was shot by a Taliban member, but miraculously, the trauma did not cause any permanent brain damage.

D. Malala Yousafzai's father was in charge of running a local learning institution when she was a child and instilled in Malala the value of education.

6. Read the following sentences.

"The Taliban, a violent fundamental Islamist group, prohibited females from participating in many activities, including attending school. The Taliban were so committed to banning female access to education that they destroyed around 400 schools within two years of their control. "

Based on the text, what does the word "prohibit" mean?

A. increase

B. stop

C. encourage

D. educate

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7. Choose the answer that best completes the sentence.

Malala and her father started to become more vocal in opposition to the Taliban's sexist rules. _____, a member of the Taliban shot Malala in the head.

A. However

B. In conclusion

C. Consequently

D. Contrastly

8. Why did the Taliban destroy around 400 schools in Pakistan within two years of their control?

9. How did Malala Yousafzai react to the Taliban's policies against girls and women? Use information from the text to support your answer.

10. The text states that Malala Yousafzai became "an international icon." An icon can be a person who is highly respected and regarded.

Why might Malala be considered "an international icon"? Use information from the text to support your answer.

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