MCMS
7th Grade
NTI Packet
Day 15

MCMS

7th Grade Math

NTI Day #15

Name _____ Date _____ Class _____

LESSON 5-5

Practice A

Solving Proportions

Find the cross products.

1. $\frac{1}{2} = \frac{x}{8}$

$8 = 2x$

$\frac{8}{2} = \frac{2x}{2}$

$4 = x$

2. $\frac{a}{6} = \frac{7}{9}$

3. $\frac{5}{b} = \frac{8}{10}$

Use cross products to solve each proportion.

4. $\frac{2}{5} = \frac{x}{10}$

5. $\frac{1}{3} = \frac{z}{15}$

6. $\frac{3}{8} = \frac{s}{16}$

7. $\frac{4}{r} = \frac{1}{4}$

8. $\frac{10}{h} = \frac{5}{6}$

9. $\frac{1}{d} = \frac{4}{12}$

10. $\frac{w}{9} = \frac{6}{18}$

11. $\frac{t}{8} = \frac{3}{4}$

12. $\frac{k}{5} = \frac{9}{15}$

13. $\frac{3}{6} = \frac{1}{f}$

14. $\frac{2}{7} = \frac{6}{d}$

15. $\frac{2}{9} = \frac{4}{c}$

16. $\frac{a}{20} = \frac{15}{10}$

17. $\frac{21}{k} = \frac{7}{4}$

18. $\frac{3}{8} = \frac{n}{40}$

19. Yolanda drove 50 miles in 2 hours at a constant speed. Use a proportion to find how long it would take her to drive 150 miles at the same speed.

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Name Date Class

7th Science
NTI 15
(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?

_____

_____

Meeting Individual Needs

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War Stories



a synagogue burning on Kristallnacht (Crystal Night) in November 1938

Some of history's most important lessons are not found in books. They're found in the minds of ordinary people who lived through extraordinary events. For our Eyewitness to History Contest, we ask readers to interview people who have witnessed historic events. Three winning interviews have a common theme: life as a child during World War II. That war began on Sept. 1, 1939, when Adolf Hitler's Nazi Germany invaded Poland. The United States entered the war in 1941, after Japan, Germany's ally, attacked the U.S. naval base at Pearl Harbor, in Hawaii. The war ended in 1945.

A Jewish Girl Growing Up in Germany in the 1930s

By Julie Sarne, The Latin School of Chicago, Ill.

Hitler hoped to conquer all of Europe-and he wanted it to be free of Jews and other people he deemed inferior. The Nazis killed more than six million Jews in the Holocaust. Julie Sarne's Oma (German for "grandmother") managed to escape.

Q: How was your childhood?
A: I grew up in a large house. My father was a wealthy lawyer and an officer in the German cavalry in

World War I. We lived in an expensive suburb of Berlin. I went to a private school. We had many servants.

Q: When did things start to change?
A: [In] 1933. I was seven and was told little, but suddenly my governess was gone. My father's clients were threatened, so he lost his income.

Q: What happened at school?
A: My girlfriends stopped playing with me. Boys taunted me and chased me when I walked home. I learned to be afraid.

Q: What happened to your house?
A: One day the Gestapo [secret police of Nazi Germany] came and told us to leave our house, where we had lived for twenty years. We moved into a small apartment with my aunt.

Q: What else happened?
A: The government closed all but two Jewish schools. We couldn't go to movie theaters, restaurants, or public parks, which had signs [that said] "No Jews Allowed."... We were allowed to shop one hour a day. Our ration cards had a big *J* on them, and we couldn't buy everything the Germans could. We could only buy meat on the black market. Once, I bought chocolate when a clerk made a mistake. I later found out my father got in trouble for this.

Q: What do you remember about Kristallnacht ["Crystal Night"]?
A: In November 1938, most synagogues were burned. Jewish shops were looted, and the windows [were] smashed. Men were sent to concentration camps. My father hid at his sister's house. I didn't know where he was, but he called daily.

Q: Did you try to leave Germany?
A: I was to go to England but [I] couldn't, as I had an operation. In the hospital, I heard the groaning of men released from the concentration camps with frostbite or worse. I shall never forget that sound.

Q: When did you leave Germany?
A: [My father and I] left Germany [on] December 7, 1940, when I was fourteen. My father wore his Iron Cross, the highest German medal of honor, but a Gestapo man ripped it off. I know that hurt my dad, but he kept his cool. ... We took the Trans-Siberian Railroad across Russia and a ship to Japan. Most countries, including the United States, wouldn't let Jewish refugees in. We went to Shanghai, China, one of the only places you could go without papers. Nearly 30,000 Jewish refugees entered Shanghai, more than were taken in by the United States [which set a quota to limit the number of Jewish immigrants]. I was finally able to leave [China in] 1948 and came by boat to San Francisco.

Q: What happened to your parents?
A: In China, we learned that [my mother had] died in Germany. My father was on the Polish quota and had to wait longer. I never saw him again, as he died at sea.

The London Blitz in WWII

By Claire Curtis, Schaghticoke Middle School, New Milford, Conn.

Claire Curtis's grandfather was nine years old during the 1940 Battle of Britain, when Germany launched a huge air attack on England. The eight-month onslaught was known as the Blitz (from the German term Blitzkrieg, meaning "lightning war"). The German air force dropped 18,000 tons of bombs, killing more than 43,000 people.

Q: Where did you live?
A: I was living in London with my parents and attending school.

Q: Where did you go when the bombing began?
A: It depended upon where we were when the air raid siren sounded. Sometimes we went to the public air raid shelter ... sometimes to the basement of the theater ... sometimes to the subway. At night we would go to our own basement and sleep there. We slept there for weeks. My mother, while insisting that my father and I go to the basement, would sleep in the bedroom. She found it claustrophobic down there.

Q: What went through your mind?
A: Being so young, I [wasn't] particularly afraid. I did anticipate the possibility of being able to gather some shrapnel from the bombs and shells from antiaircraft guns in the morning to add to my collection!

Q: Did you ever get used to it?
A: It became a way of life, lasting [fifty-seven] continuous days.

Q: What did the city look like after the bombings?
A: The city seemed in ruins. Some buildings were still burning. ... The rescue of people who were trapped under the debris ... came before the fighting of the fires. Firemen were busy night and day, even as the bombs were still falling. Glass and bricks were strewn all over, and roads ... had to be cleared for ambulances and fire trucks. All able-bodied men were recruited to clear rubble.

Q: Was your house ever attacked?
A: One day, without warning ... bombs landed in our area, one striking the house directly across from ours. The woman in the house was killed, and her body landed in our front yard. All of the windows in the front of our house were shattered, but no major damage was done to the building. I had been playing in the front room. ... Just moments before [the bombing, I had] gone to the kitchen in the back of the house, beside my mother.

Q: London was bombed day and night. What did you do to stay safe?
A: Everyone carried [a] gas mask. ... I carried mine to school, where periodically we would have air raid drills. ... The shelter in my school was in the basement, and during air raids all of the classes would go down there and wait for the all clear. There were benches for us, and blankets. The small windows in the basement were mounded with sandbags.

If there was not time to get to the basement, we had to wear our gas masks and crouch under our desks, covering our heads with our hands.

It was mandatory for all the windows to be curtained with blackout material so that not a chink of light could show [and] alert the enemy to habitation. ... Air raid wardens patrolled the streets looking for ... exposed light.

After the bomb hit so close to home, my parents decided they could take no more chances, and we moved up to Scotland, beside my grandmother, for safety. We remained there for the duration of the war.

When the war ended, the country was jubilant! Church bells rang; streetlights were turned on again. There was dancing in the streets.

Germany in WWII

By Jamie Lytle, South Park Middle School, South Park, Pa.

Life in Germany wasn't easy during the war, even for people who weren't Jewish. Hedy Gaetano, Jamie Lytle's grandmother, recalls how her home near Munich was bombed three times by Allied forces. (The United States, the United Kingdom, the Soviet Union, and China were known as the Allies.)

Q: What was life like during WWII?
A: It was ... sometimes scary. School [was often] cancelled ... but if there was an air attack during school, you had to stay at school. There was little food, times [when] you did not have a home. Most families were without fathers because they were fighting in the war. Most kids only had one pair of shoes.

Q: How old were you when your house was bombed?
A: The first time I was five. The second and third times I was six.

Q: Were you aware of why your house was being bombed?
A: Yes, because we were at war with the Americans.

Q: What do you remember?
A: I remember being in the shelter, and everything was shaking. Once we came out of the shelter, and our house was burning, so we spent the rest of the night on the street. We usually slept in our clothes because if there was an air attack, we were not allowed to turn the lights on, or there was no electricity. The first bombing of our house was ... at night. The adults were so upset about our homes being destroyed, but as a five-year-old child, I looked up to the sky and saw the most beautiful red sky I had ever seen. The red was a reflection of the burning city of Munich.

Q: What was the procedure when the air raid signal went off?
A: You rush to the shelter. You take, if you can, bare necessities: a blanket, a piece of bread, or maybe your doll.

Q: What happened at the war's end?
A: The Americans came, and they were smiling and giving us chewing gum, peanut butter, and coffee. It was several years of rebuilding our house and going back to a normal life, which meant going to school.

Name: _____ **Date:** _____

1. For the Eyewitness to History Contest, readers were asked to interview people who have witnessed historic events. What was the common theme of the three winning interviews in this text?

A. life as a child at a Jewish school

B. life as a child during World War II

C. life as a child in London, England

D. life as a child on the Trans-Siberian Railroad

2. What does Julie Sarne's Oma describe in the first interview?

A. the way she was treated by her classmates

B. the body of a neighbor landing in her front yard

C. the bombing of her house near Munich

D. the work the firemen did while the bombs were falling

3. Claire Curtis's grandfather was not afraid on the nights his family had to sleep in the basement during the air attacks on England.

What evidence in the text supports this statement?

A. He looked forward to collecting shrapnel from bombs and the shells from antiaircraft guns the next morning.

B. The shelter in his school was in the basement, and during air raids all of the classes would go down there.

C. His mother would sleep in the bedroom because she found it claustrophobic down in the basement.

D. While all of the windows in the front of his house were shattered, no major damage was done to the buildling.

4. Based on the information in the text, how might Hedy Gaetano's experience as a child living in Germany during the war best be described?

A. scary and unpredictable

B. easy and comfortable

C. calm and boring

D. safe and predictable

5. What is this text mostly about?

A. the burning of synagogues in Germany during Kristallnacht

B. the lives of three children during World War II

C. Claire Curtis's grandfather moving to Scotland during World War II

D. the United States entering the war after the attack on Pearl Harbor

6. Read these sentences from the text.

"*Hitler hoped to conquer all of Europe-and he wanted it to be free of Jews and other people he deemed inferior. The Nazis killed more than six million Jews in the Holocaust.*"

What does the phrase "to be free of" mean here?

A. to not have

B. to cost nothing for

C. to be ruled by

D. to be easy for

7. Read this sentence from the text.

"*Life in Germany wasn't easy during the war, even for people who weren't Jewish.*"

What word could replace the word "even" without changing the meaning of the sentence?

A. except

B. especially

C. including

D. specifically

8. Who were the three people interviewed in the text?

9. In the first interview, Julie Sarne's Oma discusses what life was like in Germany for Jewish people. In the third interview, Hedy Gaetano discusses what life was like in Germany for people who weren't Jewish.

Draw one contrast between their two experiences.

Support your answer with evidence from the text.

10. All three interviews in the text are about life as a child during World War II. Why might the author have chosen to share all three interviews instead of focusing on only one?

Support your answer with evidence from all three interviews.

Missing [The Run Series, #5]

by Lynne Stahl



Anna was gone.

Mac sat bolt upright and threw off his blankets. All traces of sleep had disappeared from him instantly, replaced by a rush of panic. Where could she have gone? Maybe she just needed some time to herself, he thought, but the idea rang hollow in his head. His creeping doubts from the night before returned.

Anna had been wounded by a zombie. Was she infected? Was she already one of them? What should he do? What *could* he do?

"I have to find her," he said to himself. But did he have to go alone? Mac thought for a minute. He definitely didn't want to bring Jeremiah into harm's way, but he also knew that he and Dennis should not leave the young boy all by himself.

Mac gritted his teeth, clenched his fist as if to prove he could use it, and let out a sigh. It was now or never.

He fumbled around for the tiny keychain flashlight they had grabbed at the gas station. He wished desperately that he had something bigger. The light of the tiny beam barely reached his own feet when he pointed it down at them. Kneeling, he swung the flashlight across the dirt around Anna's blankets and finally saw the footprints she had left in the soft ground.

The footprints looked strangely uneven, and he felt his stomach drop when he realized that she must have been dragging her injured leg heavily to make such long, deep marks. He wondered if she was as scared as he was. He began to wonder if people stopped being scared once they turned into zombies, then shook himself and stood up. If there was any chance that he could still help Anna, he needed to move fast.

Walking parallel to the footprints, Mac set off into the woods. He took one last look back at the pile of blankets where Dennis and Jeremiah were still asleep, trying to will them not to notice his absence. He crept along slowly as the trees grew thicker around him. He moved slowly to avoid making noise, but thoughts screeched through his head at dizzying speeds. He tried to convince himself that it might not be too late. Maybe Anna was fine. He worked to summon his earlier hope that she had just gone for a walk, but it seemed less and less likely. What would he do when he found her? If worse had come to worst and Anna had become a zombie, would he be able to bring himself to fight her? Even scarier - did he have any chance of winning?

As he walked, Mac began to hear the faint sound of running water in the distance. He realized that he must be nearing a stream or a creek. He followed the noise and was soon able to make out a soft glow: moonlight reflecting on water. He drew in his breath when the beam of his flashlight passed over what he knew instantly was a human- - or zombie- - shaped figure. Mac stood as still as he could, trying to decide what to do. The figure was bent over and seemed to be looking down, unaware of his presence.

Mac paused. If the figure was Anna, he didn't want to startle her. But if it was a zombie - or worse, a zombified Anna - he didn't want to get within arm's reach. He checked his shoelaces to make sure they were tied and braced himself to run away if necessary.

"Anna?" he called softly.

***

Dennis awoke with a startle. It took him a moment to figure out where he was and why he was sleeping on a pile of dirty tarps. "Should've stayed asleep," he mumbled to himself as the grim details of the previous day came back to him. He thought about trying for some more rest, but his stomach objected with a loud growl. They had been too exhausted to eat before bed, and now he was starving. He shook Jeremiah gently. He could use the boy's help to get a fire going. Jeremiah only muttered and rolled over. Maybe Mac would be more cooperative.

The hunger in his stomach turned into cold fear. Mac's blankets were empty, and he was nowhere to be seen. Anna was gone, too. He knew that Mac wouldn't have left without telling him unless something was seriously wrong.

"Jeremiah," he hissed, "you have to get up now. Something's wrong."

The boy sat up and rubbed his eyes, hair sticking out in all directions. "What is it?" he asked in confusion.

"Mac and Anna," Dennis replied, "they're gone."

Jeremiah blinked. "Maybe they went for a walk?" he suggested hopefully.

Dennis shook his head. He didn't want to alarm Jeremiah, but there was no time for false hope. He considered the possibilities. Had zombies gotten to Mac and Anna while they were sleeping? He doubted it. Zombies weren't known for their stealth - he definitely would have woken up to their loud groans and heavy, clumsy footsteps. That meant that Mac and Anna must have left of their own will. But why?

He shook his head again. At this point, all that mattered was finding their friends. "Let's go, he told Jeremiah, pointing to the truck. Sensing his urgency, the boy cooperated without further protest. He gathered an armful of blankets and secured them to the bed of the truck with the ratty old rope that had held the bundle together.

ghts reserved.

Dennis paused. Which direction should they go? As Jeremiah hopped into the truck's passenger seat, Dennis strode over to collect the blankets that Mac and Anna had slept in. There was no point in abandoning their few supplies. As he bent to gather them up, he spotted the imprint of a shoe in the dirt. Tracks! Just one pair of footprints at first, starting from Mac's blankets, and then another starting from Anna's. Dennis frowned. Where they joined up, the two sets of footprints were strangely close together - too close for two people to have been walking next to each other at the same time. One of them must have left the camp first, then the other followed later. But why?

Brow furrowed, Dennis hurried to the truck. He remembered how worried Mac had been the night before, even after they had used the hand sanitizer to clean Anna's wound. He hadn't seemed to share Dennis's relief that the sanitizer would kill any germs that might cause an infection.

Infection. The word rang in Dennis's head. Of course! Anna had been injured by a zombie. Wasn't that how the plague spread? Was she a zombie now? If so, could she - would she - infect Mac, too?

Dennis leapt into the driver's seat and peered out, tires whirring against the soft dirt. He steered the truck along the path of footprints as quickly as he could amid the thickening trees. The bumpy ground jolted the old truck around, and Jeremiah squealed as a particularly nasty bump lifted him straight off his seat and practically out the window.

"Buckle up," Dennis ordered, "this ride may get even bumpier."

As they progressed, Dennis felt breathless - a combination of the truck's jostling and his own rising panic. They had no weapons, no way to defend themselves. He ran through a mental list of the items they had grabbed from the gas station, but none of them would help. Out of habit, he punched on the radio and then remembered that it would just produce static. Petey "The Muskrat" Coltrain's bluegrass station and all the others had ceased broadcasting weeks ago as the plague intensified.

But it wasn't static. Somehow, it was playing music! And not just any music, but a lively bluegrass tune that he recognized from his time listening to The Muskrat's station while he and Mac were back at the farm.

"Well, at least we have a soundtrack," he said to Jeremiah, strangely cheered by the familiar song. Jeremiah seemed unimpressed. Turning his full attention to the path ahead, Dennis focused his gaze and braked slightly. Ahead and to their left, he could make out a stream flowing through the trees in the distance. He squinted. Something was moving next to the water. Were those people? They were - it was Mac and Anna!

Dennis and Jeremiah stared in horror. Anna had a hand firmly around Mac's throat.

--

Ed.: *The tale continues in Part 6, "Changes."*

Name: _____ **Date:** _____

1. Who is missing at the beginning of the story?

A. Mac

B. Dennis

C. Anna

D. Jeremiah

2. Whose perspective does this story show?

A. Anna's

B. Mac's and Jeremiah's

C. Just Mac's

D. Mac's and Dennis's

3. Read these sentences from the text.

"The footprints looked strangely uneven, and [Mac] felt his stomach drop when he realized that [Anna] must have been dragging her injured leg heavily to make such long, deep marks. He wondered if she was as scared as he was. He began to wonder if people stopped being scared once they turned into zombies..."

What conclusion can be drawn based on these sentences?

A. Mac thinks Anna may have become a zombie.

B. Mac thinks he can save Anna from other zombies.

C. Mac thinks Anna is braver than he is.

D. Mac feels sick when he sees or thinks about injuries.

4. This story has two climaxes, or points when the tension is at its highest. One climax is when Mac softly calls out "Anna?" by the stream. What is the other climax?

A. when Dennis wakes up to find Mac and Anna missing

B. when Mac wakes up to find Anna missing

C. when Dennis turns on the radio to find a bluegrass song playing

D. when Dennis and Jeremiah discover Mac and Anna by the stream

5. What is the main idea of this text?

A. After waking up in the woods with a bad injury, a girl named Anna runs away to find help.

B. After waking up in the woods to find their friend missing, three boys worry that their companion has turned into a zombie.

C. After waking up in the woods, two boys worry that they may be attacked by a crowd of plague-ridden zombies and become infected.

D. In a truck ride through the woods, a young boy is annoyed that the radio no longer plays anything but bluegrass music.

6. Read these sentences from the text.

"Mac paused. If the figure was Anna, he didn't want to startle her. But if it was a zombie--or worse, a zombified Anna--he didn't want to get within arm's reach. He checked his shoelaces to make sure they were tied and braced himself to run away if necessary.

"Anna?" he called softly.

Dennis awoke with a start. It took him a moment to figure out where he was and why he was sleeping on a pile of dirty tarps."

Why might the author have switched to Dennis's perspective at this point in the story?

A. to confuse the reader about the setting of the story

B. to leave the reader in suspense about what happens with Mac and Anna

C. to show the reader how Mac and Dennis have very different personality traits

D. to give the reader a sense of calm about Dennis's safety

7. Choose the answer that best completes the sentence.

Mac is worried that the figure by the stream may be a zombie, ___ he tries to stay out of arm's reach.

A. so

B. but

C. though

D. before

8. Describe what Anna's footprints leading away from her blankets look like.

9. What do Dennis and Jeremiah see at the very end of the story?

10. What has most likely happened to Anna by the end of the story? Support your answer with at least two pieces of evidence from the text.