Grade 7 Summer Calendar Answer Key

Answers will vary for many of the activities depending on the choices students make. Here are the answers for activities with specific solutions.

Week 1, Option #1

Twenty lawns can be mowed in 35 hours. The lawns per hour are about 0.57 or just over a half of a lawn per hour.

Week 1, Option #2

The prime factorization of 32 is 2^5

Week 1, Option #3

The given solution shows some possible equivalent expressions, but there are many variations possible.

- The distance to school, and therefore home, is d. Thus, the student rides (d + d) miles in one day. Equivalently, she rides (2d) miles in one day.
- Repeatedly adding the distance traveled in one day for each school day of the week, we find that in one week the student travels (2d + 2d + 2d + 2d + 2d) miles.
- Equivalently, she travels 5(2d) or (10d) miles in a week.

Week 1, Option #5

Factors of 48: 1, 2, 3, 4, 6, 8, 12, 16, 24, 48

Factors of 64: 1, 2, 4, 8, 16, 32, 64

Common factors: 1, 2, 4, 8, 16

Greatest Common Factor (GCF): 16

Week 2, Option #1

N = the number of people
100 + 5n

Week 2, Option #2

We can count from -28 up to 65. If Anchorage, Alaska was 28 degrees warmer than it is on this winter morning, the temperature would be zero degrees. If Anchorage, Alaska was 65 degrees warmer still, the temperature would be 65 degrees, the same temperature as Miami, Florida. In order for Anchorage, Alaska to be the same temperature as Miami, Florida, Anchorage would have to be 28+65=93 degrees warmer than it is. Thus, Miami is 93 degrees warmer than Anchorage.

Week 2, Option #2

167 - 88 = 79, so Seth needs to make $79. Since

$$79 \div 7.25 \approx 10.9$$

Seth will have to work about 11 hours to make enough money to buy the skateboard.

Week 2, Option #4

- She could ride 1 mile in 7.5 minutes and 2 miles (1 + 1) in 15 minutes (7.5 + 7.5).
- She rides 150/20 minutes per mile which is 7.5 minutes per mile. So it would take her 45 minutes to ride 6 miles because 6 × 7.5 = 45.
- If she rides 2 miles in 15 minutes, then she can ride 4 miles in 30 minutes and 8 miles per hour.

Week 2, Option #5

X = 5

Week 3, Option #1

This question is equivalent to asking, "What fraction of $\frac{1}{2}$ liter is $\frac{3}{8}$ liter?" We can write this symbolically as $? \times \frac{1}{2} = \frac{3}{8}$ which is equivalent to the division problem $\frac{3}{8} \div \frac{1}{2} = ?$

So: $\frac{3}{8} \div \frac{1}{2} = \frac{3}{8} \times \frac{2}{1} = \frac{6}{8} = \frac{3}{4}$

Alisa drank $\frac{3}{4}$ of the juice that was in the bottle.

Week 3, Option #2

Ben is incorrect. It is common for students to compare negative numbers as if they were positive and to assume that the one with the greatest magnitude is the greatest number. However, -23 is to the left of -14 on the number line, and so it is less than -14. Thus $-23 < -14$ and Alaska was colder.

Week 3, Option #5

2,520

Week 4, Option #1

- If we let w denote the length of the morning walk, Mia walks w + 2.5w or 3.5w miles each day.
- At the end of the week she has walked 7 times as far and she said that this was 30 miles.
- Solving the equation 24.5w = 30, we have w = 30/24.5 ≈ 1.2 miles.
- Therefore the distance of Mia's morning walk is about 1.2 miles.

Week 4, Option #2

Examples:
30 and 60

Week 4, Option #4

One possible way to solve this problem is to recognize that 3 cups of peanuts times 3 will give 9 cups. The amount of chocolate will also increase at the same rate (3 times) to give 6 cups of chocolate.

Students could also find the number of cups of chocolate candies for 1 cup of peanuts by dividing both sides of the table by 3, giving 2/3 cup of chocolate for each cup of peanuts. To find the amount of chocolate needed for 9 cups of peanuts, students multiply the unit rate by nine (9 x 2/3), giving 6 cups of chocolate.

Week 4, Option #5

Yes, it will form a triangular prism.

Week 5, Option #1

Death Valley is located below sea level. We know this because its elevation is negative. Sea level is the base for measuring elevation. Sea level elevation is defined as 0 ft. All other elevations are measured from sea level. Those places on Earth that are above sea level have positive elevations, and those places on Earth that are below sea level have negative elevations. Thus, Death Valley, with an elevation of -282 feet, is located below sea level.

To find out how much higher Denver is than Death Valley, we can reason as follows:
Death Valley is 282 feet below sea level. Denver is 5280 above sea level. So to go from Death Valley to Denver, you would go up 282 feet to get to sea level and then go up another 5280 feet to get to Denver for a total of **282 + 5280 = 5562** feet. Thus, Denver, Colorado is 5562 feet higher than Death Valley, California.

Week 5, Option #2

$V = lwh = 20 \times 20 \times 16 = 6400\ cm^3$

If Amy fills the tank 3/4 of the way, the height of the water in the tank will be
$3/4 \times 16 = 12$ cm, while the width and the length remain unchanged.
So the volume of the water will be: $V = lwh = 20 \times 20 \times 12 = 4800\ cm^{3.}$

Week 5, Option #4

Find the area to paint, then the number of gallons to cover the area.

First Alexis needs to find the area she needs to paint.
Alexis will need to paint two 30 foot - by - 50 foot walls and two 30 foot - by - 80 foot walls:
2×30 feet ×50 feet = 3000 square feet
2×30 feet ×80 feet =4800 square feet

Alexis will need to paint 3000 + 4800 = 7800 square feet.

Next, the table below shows how many square feet she can cover with different quantities of paint.
20 gallons is a little more than she needs, so she can check 19 gallons and 18 gallons:

Number of gallons of paint	Area covered
1	420
5	2100
10	4200
15	6300
20	8400
19	7980
18	7560

18 gallons isn't quite enough and 19 gallons is a bit more than she needs. Since paint is usually sold in whole gallons, it makes sense for Alexis to buy 19 gallons of paint.
Finally, since paint costs $28 per gallon, the total cost will be
19 gallons × $28 per gallon = $532

It will cost Alex $532 to paint the barn.

Week 5, Option #5
The Patriots scored 32 points and the Giants by 12.

Week 6, Option #4
The seventh number would be 11.

Week 6, Option #5
Sophia's dad paid $43.25 for 12.5 gallons of gas. If we think of a gallon of gas as a group, we know that the cost of 12.5 groups is $43.25. The answer we are asked to answer is, "What is the cost of one gallon?" which is the same as asking, How many dollars in one group?" To find the answer to this questions we must evenly distribute the $43.25 amongst the 12.5 groups. This is the meaning of 43.25 ÷ 12.5, so the cost of one gallon is 43.25 ÷ 12.5 = $3.46

Week 7, Option #1
Bryan must sell 40 candy bars.

Week 7, Option #2
They are not equivalent expressions.

Week 7, Option #4
$-55 > -89$
The average temperature on Mars is warmer than the coldest temperature on Earth.

Week 7, Option #5
The largest possible area would be a square with a side length of 30. The area would be 900 square inches.
Week 8, Option #1
It would take Terri 16 2/3 minutes to swim 20 laps.

Week 8, Option #2
The smallest three-digit number that is divisible by exactly three different prime numbers is 102. It is divisible by 2,3 and 17.

Week 8, Option #3
This problem requires students to understand that multiplication is understood when numbers and variables are written together and to use the order of operations to evaluate.
(3 x 4) + (2 x 2.4) =
12 – 4.8 = 16.8

Week 8, Option #5
The sum of the first ten prime numbers is 129.

Week 9, Option #1
A= 2
B= 1
C= 7
D= 8

Week 9, Option #2
To find the price of 1 book, divide $18 by 3. One book is $6. To find the price of 7 books, multiply $6 (the cost of one book times 7 to get $42. To find the number of books that can be purchased with $54, multiply $6 times 9 to get $54 and then multiply 1 book times 9 to get 9 books.

Week 9, Option #3
This problem is based on Archimedes' Principle that the volume of an immersed object is equivalent to the volume of the displaced water. While the stone itself is an irregular solid, relating it to the displaced water in a rectangular tank means that the actual volume calculation is that of a rectangular prism, and therefore, fits in with content standard 6.G.2.

Solution: Using the formula V = lwh
The change in water height is 8 cm– 6 cm = 2 cm. The volume of the displaced water is the product of the length, width, and change in the height of the water, and 24 × 30 × 2 = 1440. The volume of the stone is the same as the volume of the displaced water, we know the stone has volume 1440 cm

Number of Books	Cost
1	6
3	18
7	42
9	54

Week 9, Option 5
There are 55 squares