Level 3: The Number System Posttest Answer Key

Question 1:

Allison has 4 credit cards. The table shows the account balance on each credit card.

Credit Card Account Balances

Credit Card	Balance
1	−25
2	100
3	−250
4	−125

To find the mean of the account balances, Allison adds them and then divides the sum by 4.

What is the mean account balance?

a. −$125

b. −$75

c. $75

d. $125

Question 2:

The letters p and q represent temperatures in degrees Celsius. The values for p and q are negative integers. Which expression is equivalent to $p - q$?

a. $p + |q|$

b. $p - |q|$

c. $|p| + |q|$

d. $|p| - |q|$

Continue

Question 3:

Trisha has $4\frac{1}{2}$ bags of cement mix. To make one cement block, she needs $\frac{1}{2}$ bag of mix.

Which expression can Trisha use to find out how many cement blocks she can make?

a. $4 \div 2 + \frac{1}{4}$

b. $4 \div \frac{1}{2} + \frac{1}{4}$

c. $4 \times \frac{1}{2} + \frac{1}{2} \times \frac{1}{2}$

d. $4 \times 2 + \frac{1}{2} \times 2$

Question 4:

A cement truck uses $15\frac{3}{8}$ gallons of gasoline to travel $3\frac{3}{4}$ miles.

How many gallons of gasoline does the truck use per mile?

a. $4\frac{1}{10}$ gallons

b. $4\frac{2}{3}$ gallons

c. $5\frac{1}{4}$ gallons

d. $5\frac{1}{2}$ gallons

Question 5:

A part for a machine is $\frac{9}{11}$ cm long. Which number is equivalent to $\frac{9}{11}$?

a. $0.8\overline{1}$

b. $0.\overline{81}$

c. $0.81\overline{8}$

d. $0.\overline{818}$

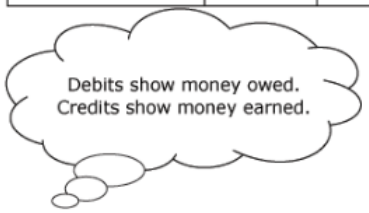
Continue

Question 6:

The table shows the account balances for Brookside Plumbing.

Brookside Plumbing Account Balance

Item	Debit	Credit
2 Boilers	−$9,645	
Customer payment		$12,000
Copper pipe	−$4,648	
Payroll	−$7,246	
Customer payment		$9,450



What is the account balance?

$ $-89

Question 7:

The table shows the average low temperatures on top of Mount McKinley in Alaska.

Mount McKinley Average Low Temperatures

Month	Temperature (°C)
January	−22
February	−19
March	−17
April	−7
May	2
June	8
July	9
August	7
September	1
October	−9
November	−17
December	−20

How many degrees colder is the average low temperature in March than in May?

19 °C

Continue

Question 8:

Suppose that x and y are negative numbers.

Which expression is equivalent to $x + y$?

a. $x + |y|$

b. $x - |y|$

c. $|x| + |y|$

d. $|x| - |y|$

Question 9:

Which equation is not true?

a. $-23 - 17 = -17 - 23$

b. $-23 - (-17) = -17 + 23$

c. $-17 - 23 = -17 + (-23)$

d. $-17 - (-23) = -17 + 23$

Question 10:

Which quotient does not represent a rational number?

a. $\frac{-8}{-4}$

b. $\frac{-8}{5}$

c. $\frac{8}{-3}$

d. $\frac{8}{0}$

Continue

Question 11:

A waitperson received a total of $22.50 in tips one morning. She gave $\frac{1}{5}$ of the tips to the cook, and $\frac{1}{3}$ of the tips to the hostess.

How much money did the waitperson have left?

a. $15.00

b. $12.00

c. $11.50

d. $10.50

Question 12:

Terry earns $7.80 each hour at her job.

What amount does Terry earn for working $6\frac{3}{4}$ hours?

a. $47.81

b. $48.45

c. $49.45

d. $52.65

Question 13:

Kirsten made a necklace with three colors of beads.

- There are 24 red beads.
- The number of red beads is $\frac{3}{4}$ the number of blue beads.
- The number of white beads is 0.5 the number of blue beads.

What is the total number of beads on Kirsten's necklace?

a. 51

b. 72

c. 78

d. 120

Continue

Question 14:

The sum of two numbers is 0. One of the numbers is 4.

What is the other number?

-4

Question 15:

The lowest elevation in North America is −282 feet. The lowest elevation in South America is −344 feet.

How many feet lower is the lowest elevation in South America than the lowest elevation in North America?

62 feet

Question 16:

Look at the expression below.

$\frac{4}{5}(\frac{3}{8} - 1)$

Simplify the expression.

$-\frac{1}{2}$

Question 17:

Petra sewed a $\frac{7}{16}$-inch hem on a skirt.

Write the decimal equivalent of $\frac{7}{16}$.

0.4375

Question 18:

A thermometer showed that the temperature outside changed by –15 °C in 4 hours, or at an average rate of $-\frac{15}{4}$ °C per hour.

What is $-\frac{15}{4}$ written as a decimal number?

-3.75

Continue

Question 19:

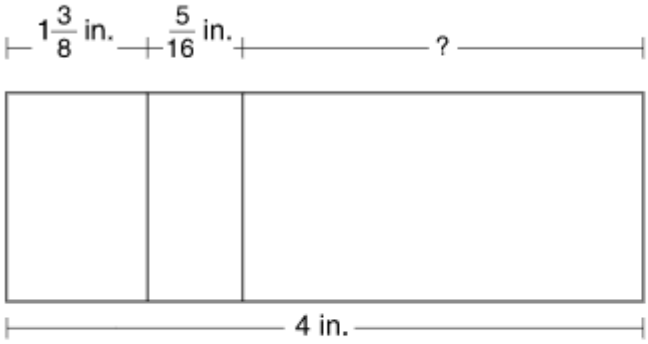
A chemist is making batches of a liquid. Each batch requires 0.2 gram of carbon.

If she has 3 grams of carbon, how many batches of the liquid can she make?

15 batches

Question 20:

A machinist is working with a rectangular piece of metal that is 4 inches in length. Two pieces will be cut from one end of the metal, as shown in the diagram below.



After the two pieces are cut from it, what will be the length, in inches, of the rectangular piece of metal?

$2\frac{5}{16}$ inches

Question 21:

Nikki has $6\frac{1}{2}$ cups of hot cocoa mix. To make one serving of hot cocoa, she needs $\frac{1}{2}$ cup of mix. Which expression can Nikki use to find out how many servings of hot cocoa she can make?

a. $6 \times \frac{1}{2} + \frac{1}{2} \times \frac{1}{2}$

b. $6 \times 2 + \frac{1}{2} \times 2$

c. $6 \div 2 + \frac{1}{4}$

d. $6 \div \frac{1}{2} + \frac{1}{4}$

Continue

Question 22:

In Mr. Rivera's class, $\frac{1}{8}$ of the students have birthdays in June.

- Of those students, $\frac{3}{5}$ were born on odd-numbered days.
- There are 2 students in the class who were born on even-numbered days in June

How many students in Mr. Rivera's class were **not** born in June?

a. 35

b. 37

c. 38

d. 40

Question 23:

An ice-cream shop uses $12\frac{3}{8}$ containers of whipped cream during a $6\frac{3}{4}$ hour day.

How many containers of whipped cream does the ice-cream shop use each hour? Write your answer in fraction form.

$1\frac{5}{6}$ containers per hour

Question 24:

A farmer's rectangular pasture is $\frac{3}{4}$ mile long. The width of the pasture is $\frac{2}{3}$ the length.

What is the perimeter of the pasture in miles?

$2\frac{1}{2}$ miles

Stop