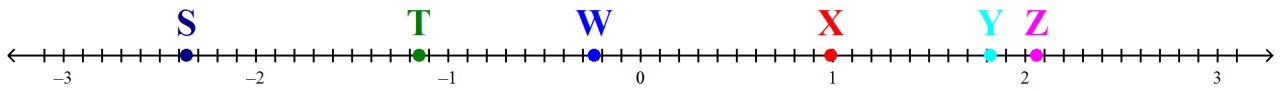


3. Write the letter that corresponds to the place the given number would be on the number line:

$$\frac{-24}{100}$$



- a. **X**
- b. **Y**
- c. **Z**
- d. **W**

ANS: D

The number is: -0.24 so that the correct answer: **W**

	Feedback
A	Incorrect.
B	Incorrect.
C	Incorrect.
D	Correct!

PTS: 1

DIF: Grade 6

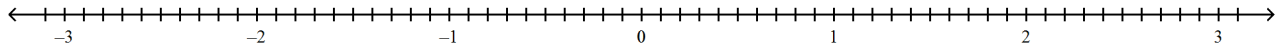
REF: 6NS.1.0 Students compare and order positive and negative fractions, decimals, and mixed numbers. Students solve problems involving fractions, ratios, proportions, and percentages:

OBJ: 6NS1.1: Compare and order positive and negative fractions, decimals, and mixed numbers and place them on a number line. STA: CA TOP: Number Sense

MSC: LFS & BJ-275

4. Draw these numbers on the number line and then list these values from lowest to highest:

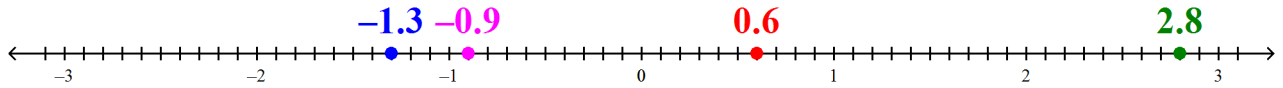
2.8 -0.9 -1.3 0.6



- a. 2.8, 0.6, -0.9, -1.3 c. -1.3, 2.8, -0.9, 0.6
 b. -1.3, -0.9, 0.6, 2.8 d. -1.3, 0.6, -0.9, 2.8

ANS: B

From lowest to highest we have: -1.3, -0.9, 0.6, 2.8



	Feedback
A	You have listed them in the wrong order.
B	Correct!
C	Incorrect.
D	The middle numbers are incorrectly ordered.

PTS: 1

DIF: Grade 6

REF: 6NS1.0: Students compare and order positive and negative fractions, decimals, and mixed numbers. Students solve problems involving fractions, ratios, proportions, and percentages.

OBJ: 6NS1.1: Students compare and order positive and negative fractions, decimals, and mixed numbers and place them on a number line. STA: CA TOP: Number Sense

MSC: LFS & BJ-275

5. The ratio of bicycles to bicycle wheels is _____

- a. 2 : 1 c. 1 : 2
 b. 1 : 1 d. 1 : 4

ANS: C

Correct answer: 1 : 2 or 1 to 2 or $\frac{1}{2}$

	Feedback
A	This ratio is backwards - read the question again.
B	How many wheels on one bicycle?
C	Correct!
D	How many wheels on one bicycle?

PTS: 1

DIF: Grade 6

REF: 6NS1.0: Students compare and order positive and negative fractions, decimals, and mixed numbers. Students solve problems involving fractions, ratios, proportions, and percentages.

OBJ: 6NS1.2: Students interpret and use ratios in different contexts (e.g., batting averages, miles per hour) to show the relative sizes of two quantities, using appropriate notations (a/b, a to b, a :b).

STA: CA

TOP: Number Sense

MSC: LFS & BJ-275

8. If there are 45 fingers, how many hands are there? (A thumb is a finger.)

- a. 9
- b. 225
- c. 8
- d. 45

ANS: A

The ratio of hands to fingers is: $\frac{1}{5}$.

Let n be the number of hands.

Then, $\frac{1}{5} = \frac{n}{45}$

$$5n = 45$$

$$n = 9$$

	Feedback
A	Correct!
B	You need to divide, not multiply
C	You divided incorrectly.
D	This is just the number of fingers

PTS: 1

DIF: Grade 6

REF: 6NS1.0: Students compare and order positive and negative fractions, decimals, and mixed numbers. Students solve problems involving fractions, ratios, proportions, and percentages.

OBJ: 6NS1.2: Students interpret and use ratios in different contexts (e.g., batting averages, miles per hour) to show the relative sizes of two quantities, using appropriate notations (a/b , a to b , $a : b$).

STA: CA

TOP: Number Sense

MSC: LFS & BJ-275

9. If the ratio of girls to boys on the team is 5:3 and there are 15 boys, how many girls are there?

- a. 9
b. 45
c. 225
d. 40

ANS: A

Let x be the number of girls.

Then $5:3 = 15:x$

$$\frac{5}{3} = \frac{15}{x}$$

$$x = \frac{3 \cdot 15}{5}$$

$$x = 9$$

	Feedback
A	Correct!
B	You did not multiply/divide correctly.
C	Incorrect.
D	That is not the right way to calculate

PTS: 1

DIF: Grade 6

REF: 6NS1.0: Students compare and order positive and negative fractions, decimals, and mixed numbers. Students solve problems involving fractions, ratios, proportions, and percentages.

OBJ: 6NS1.2: Students interpret and use ratios in different contexts (e.g., batting averages, miles per hour) to show the relative sizes of two quantities, using appropriate notations (a/b , a to b , $a : b$).

STA: CA

TOP: Number Sense

MSC: LFS & BJ-275

10. Solve for n : $\frac{7}{4} = \frac{n}{28}$

a. 45

c. 784

b. 16

d. 49

ANS: D

$$\frac{7}{4} = \frac{n}{28}$$

$$7 \cdot 28 = 4 \cdot n$$

$$4 \cdot n = 7 \cdot 28$$

$$n = \frac{196}{4}$$

$$n = 49$$

	Feedback
A	You did not multiply/divide correctly.
B	This is too small. You are dividing when you need to multiply.
C	This is too big. You are multiplying when you need to divide.
D	Correct!

PTS: 1

DIF: Grade 6

REF: 6NS1.0: Students compare and order positive and negative fractions, decimals, and mixed numbers. Students solve problems involving fractions, ratios, proportions, and percentages.

OBJ: 6NS1.3: Students use proportions to solve problems (e.g., determine the value of N if $\frac{4}{7} = \frac{N}{21}$, find the length of a side of a polygon similar to a known polygon). Use cross multiplication as a method for solving such problems, understanding it as the multiplication of both sides of an equation by a multiplicative inverse. STA: CA TOP: Number Sense

MSC: LFS & BJ-275

11. Solve for n : $\frac{10}{3} = \frac{80}{n}$

a. 28

c. 7

b. 24

d. 6

ANS: B

$$\frac{10}{3} = \frac{80}{n}$$

$$10 \cdot n = 3 \cdot 80$$

$$n = \frac{240}{10}$$

$$n = 24$$

	Feedback
A	You did not multiply/divide correctly.
B	Correct!
C	This is too small. You are dividing when you need to multiply.
D	Incorrect.

PTS: 1

DIF: Grade 6

REF: 6NS1.0: Students compare and order positive and negative fractions, decimals, and mixed numbers. Students solve problems involving fractions, ratios, proportions, and percentages.

OBJ: 6NS1.3: Students use proportions to solve problems (e.g., determine the value of N if $4/7 = N/21$, find the length of a side of a polygon similar to a known polygon). Use cross multiplication as a method for solving such problems, understanding it as the multiplication of both sides of an equation by a multiplicative inverse. STA: CA TOP: Number Sense

MSC: LFS & BJ-275

12. Make a proportion and solve for the unknown.

A truck went 7 miles in 4 hours. If it continues going the same speed, how long will it take to go 70 miles?

a. 44 h

c. 3 h

b. 25 h

d. 40 h

ANS: D

$$\frac{7}{4} = \frac{70}{t}$$

$$7t = 4 \times 70$$

$$7t = 280$$

$$t = 40$$

	Feedback
A	You are guessing.
B	Incorrect.
C	You did not multiply/divide correctly.
D	Correct!

PTS: 1

DIF: Grade 6

REF: 6NS1.0: Students compare and order positive and negative fractions, decimals, and mixed numbers. Students solve problems involving fractions, ratios, proportions, and percentages.

OBJ: 6NS1.3: Students use proportions to solve problems (e.g., determine the value of N if $\frac{4}{7} = \frac{N}{21}$, find the length of a side of a polygon similar to a known polygon). Use cross-multiplication of both sides of an equation by a multiplicative inverse. STA: CA

TOP: Number Sense

MSC: LFS & BJ-275

13. Make a proportion and solve for the unknown.

A boat went 3 miles in 5 hours. If it continues going the same speed, how long will it take to go 30 miles?

- a. 55 h
- b. 50 h
- c. 2 h
- d. 9 h

ANS: B

Let t be the time it takes the boat to go 30 miles.

$$\frac{3}{5} = \frac{30}{t}$$

$$3t = 5 \times 30$$

$$3t = 150$$

$$t = 50$$

	Feedback
A	You are guessing.
B	Correct!
C	You did not multiply/divide correctly.
D	Incorrect.

PTS: 1

DIF: Grade 6

REF: 6NS1.0: Students compare and order positive and negative fractions, decimals, and mixed numbers. Students solve problems involving fractions, ratios, proportions, and percentages.

OBJ: 6NS1.3: Students use proportions to solve problems (e.g., determine the value of N if $\frac{4}{7} = \frac{N}{21}$, find the length of a side of a polygon similar to a known polygon). Use cross-multiplication of both sides of an equation by a multiplicative inverse. STA: CA

TOP: Number Sense

MSC: LFS & BJ-275

20. Calculate and reduce to lowest terms: $3\frac{5}{6} + 3\frac{1}{2} + 2\frac{7}{8} =$ _____

a. $10\frac{2}{24}$

c. $3\frac{3}{16}$

b. $10\frac{5}{24}$

d. $16\frac{5}{24}$

ANS: B

$$3\frac{5}{6} + 3\frac{1}{2} + 2\frac{7}{8} = \frac{23}{6} + \frac{7}{2} + \frac{23}{8} = \frac{88}{12} + \frac{23}{8} = \frac{980}{96} = \frac{245}{24} = 10\frac{5}{24}$$

	Feedback
A	You have calculated incorrectly.
B	Correct!
C	This is not the correct lcd.
D	You have made a mistake in the whole part.

PTS: 1

DIF: Grade 6

REF: 6NS.2.0 Students calculate and solve problems involving addition, subtraction, multiplication, and division:

OBJ: 6NS.2.1 Solve problems involving addition, subtraction, multiplication, and division of positive fractions and explain why a particular operation was used for a given situation.

STA: CA

TOP: Number Sense

MSC: LFS & GS-477

21. Evaluate: $3\frac{1}{2} - 1\frac{4}{5}$. Write as a reduced, mixed fraction.

a. $1\frac{7}{10}$

c. $-\frac{1}{7}$

b. $3\frac{3}{10}$

d. $4\frac{5}{7}$

ANS: A

$$3\frac{1}{2} - 1\frac{4}{5} = 1\frac{7}{10}$$

	Feedback
A	Correct!
B	You made a mistake in your subtraction.
C	You must find the least common denominator.
D	Incorrect.

PTS: 1

DIF: Grade 6

REF: 6NS.2.0 Students calculate and solve problems involving addition, subtraction, multiplication, and division:

OBJ: 6NS.2.1 Solve problems involving addition, subtraction, multiplication, and division of positive fractions and explain why a particular operation was used for a given situation.

STA: CA

TOP: Number Sense

MSC: LFS & GS-477

22. Calculate and write your answer as a mixed fraction reduced to lowest terms.

$$51 \times 2\frac{2}{5} =$$

a. $102\frac{2}{5}$

c. $\frac{612}{5}$

b. $21\frac{1}{4}$

d. $122\frac{2}{5}$

ANS: D

$$51 \times 2\frac{2}{5} = \frac{51}{1} \times \frac{12}{5} = \frac{51 \cdot 12}{1 \cdot 5} = \frac{612}{5} = 122\frac{2}{5}.$$

	Feedback
A	First make the mixed fraction into an improper fraction, then multiply.
B	Don't invert before multiplying.
C	This is not a mixed fraction reduced to lowest terms.
D	Correct!

PTS: 1

DIF: Grade 6

REF: 6NS.2.0 Students calculate and solve problems involving addition, subtraction, multiplication, and division:

OBJ: 6NS.2.2 Explain the meaning of multiplication and division of positive fractions and perform the calculations (e.g., $5/8 : 15/16 = 5/8 \times 16/15 = 2/3$). STA: CA

TOP: Number Sense

MSC: LFS & GS-477

23. Calculate and reduce to lowest terms when appropriate.

$$34 \div 1\frac{3}{5} =$$

a. $21\frac{1}{4}$

c. $\frac{4}{85}$

b. $54\frac{2}{5}$

d. $\frac{170}{8}$

ANS: A

$$\begin{aligned} 34 \div 1\frac{3}{5} &= \frac{34}{1} \div \frac{8}{5} \\ &= \frac{34}{1} \cdot \frac{5}{8} \\ &= \frac{34 \cdot 5}{1 \cdot 8} \\ &= \frac{85}{4} \\ &= 21\frac{1}{4} \end{aligned}$$

	Feedback
A	Correct!
B	You need to invert the second fraction before multiplying.
C	This is the reciprocal value.
D	This fraction is not reduced to lowest terms.

PTS: 1

DIF: Grade 6

REF: 6NS.2.0 Students calculate and solve problems involving addition, subtraction, multiplication, and division:

OBJ: 6NS.2.2 Explain the meaning of multiplication and division of positive fractions and perform the calculations (e.g., $5/8 : 15/16 = 5/8 \times 16/15 = 2/3$). STA: CA

TOP: Number Sense

MSC: LFS & GS-477

26. Find integer solutions: $-8(-6+9) = \underline{\hspace{2cm}}$.

- a. 120
- b. -120
- c. 24
- d. -24

ANS: D

$$-8 \cdot (-6 + 9) = (-8) \cdot (3) = -24$$

	Feedback
A	You must do the calculation in the parenthesis first.
B	Incorrect and wrong sign.
C	Wrong sign.
D	Correct!

PTS: 1

DIF: Grade 6

REF: 6NS.2.0 Students calculate and solve problems involving addition, subtraction, multiplication, and division:

OBJ: 6NS.2.3 Solve addition, subtraction, multiplication, and division problems, including those arising in concrete situations, that use positive and negative integers and combinations of these operations.

STA: CA

TOP: Number Sense

MSC: LFS & GS-477

27. Find integer solutions: $(-4)(-2)(3) = \underline{\hspace{2cm}}$.

- a. -24
- b. -11
- c. 24
- d. 11

ANS: C

$$(-4) \cdot (-2) \cdot (3) = 24$$

	Feedback
A	Wrong sign.
B	Incorrect.
C	Correct!
D	You need to multiply all three numbers.

PTS: 1

DIF: Grade 6

REF: 6NS.2.0 Students calculate and solve problems involving addition, subtraction, multiplication, and division:

OBJ: 6NS.2.3 Solve addition, subtraction, multiplication, and division problems, including those arising in concrete situations, that use positive and negative integers and combinations of these operations.

STA: CA

TOP: Number Sense

MSC: LFS & GS-477

28. $-36 \div 2 = \underline{\hspace{2cm}}$.

- a. 18
- b. 72
- c. -72
- d. -18

ANS: D
 $-36 \div 2 = 18$

	Feedback
A	Wrong sign.
B	Incorrect.
C	You need to divide the first number by the second.
D	Correct!

PTS: 1 DIF: Grade 6
 REF: 6NS.2.0 Students calculate and solve problems involving addition, subtraction, multiplication, and division:
 OBJ: 6NS.2.3 Solve addition, subtraction, multiplication, and division problems, including those arising in concrete situations, that use positive and negative integers and combinations of these operations. STA: CA TOP: Number Sense
 MSC: LFS & GS-477

29. $-18 + (6 + 11) = \underline{\hspace{2cm}}$.

- a. 1
- b. -23
- c. 23
- d. -1

ANS: D
 $-18 + (6 + 11) = -1$

	Feedback
A	Wrong sign.
B	Do the operation inside the parenthesis first.
C	Incorrect.
D	Correct!

PTS: 1 DIF: Grade 6
 REF: 6NS.2.0 Students calculate and solve problems involving addition, subtraction, multiplication, and division:
 OBJ: 6NS.2.3 Solve addition, subtraction, multiplication, and division problems, including those arising in concrete situations, that use positive and negative integers and combinations of these operations. STA: CA TOP: Number Sense
 MSC: LFS & GS-477

32. Reduce to lowest terms: $\frac{172}{48}$

a. 4

c. $\frac{86}{24}$

b. $\frac{43}{12}$

d. $\frac{12}{43}$

ANS: B

$$\frac{172}{48} = \text{gcf}(172, 48) = 4$$

$$\frac{172}{48} = \frac{172}{4} \div \frac{48}{4} = \frac{43}{12}$$

	Feedback
A	This is just the greatest common factor.
B	Correct!
C	This is not reduced.
D	You inverted the fraction.

PTS: 1

DIF: Grade 6

REF: 6NS.2.0 Students calculate and solve problems involving addition, subtraction, multiplication, and division:

OBJ: 6NS.2.4 Determine the least common multiple and the greatest common divisor of whole numbers; use them to solve problems with fractions (e.g., to find a common denominator to add two fractions or to find the reduced form for a fraction).

STA: CA

TOP: Number Sense

MSC: LFS & GS-477

33. What is the least common multiple of 14 and 20?

a. 2

c. 280

b. 140

d. 6

ANS: B

$$\text{gcf}(14, 20) = 2$$

$$\text{lcm}(14, 20) = \frac{14 \cdot 20}{2} = 140$$

	Feedback
A	This is the greatest common factor.
B	Correct!
C	You need to divide this number by the greatest common factor.
D	Incorrect.

PTS: 1

DIF: Grade 6

REF: 6NS.2.0 Students calculate and solve problems involving addition, subtraction, multiplication, and division:

OBJ: 6NS.2.4 Determine the least common multiple and the greatest common divisor of whole numbers; use them to solve problems with fractions (e.g., to find a common denominator to add two fractions or to find the reduced form for a fraction).

STA: CA

TOP: Number Sense

MSC: LFS & GS-477