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Unit 7, Lesson 3: Comparing Positive and Negative Numbers

1. Decide whether each inequality statement is true or false. Explain your reasoning.

a. $-5 > 2$

b. $3 > -8$

c. $-12 > -15$

d. $-12.5 > -12$

2. Here is a true statement: $-8.7 < -8.4$. Select **all** of the statements that are equivalent to $-8.7 < -8.4$.

A. -8.7 is further to the right on the number line than -8.4 .

B. -8.7 is further to the left on the number line than -8.4 .

C. -8.7 is less than -8.4 .

D. -8.7 is greater than -8.4 .

E. -8.4 is less than -8.7 .

F. -8.4 is greater than -8.7 .

3. The table shows five states and the lowest point in each state.

state	lowest elevation (feet)
California	-282
Colorado	3350
Louisiana	-8
New Mexico	2842
Wyoming	3099

Put the states in order by their lowest elevation, from least to greatest.

(from Unit 7, Lesson 4)

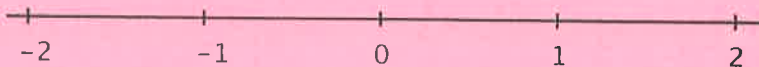
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4. Plot each of the following numbers on the number line. Label each point with its numeric value.

$0.4, -1.5, -1\frac{7}{10}, -\frac{11}{10}$



(from Unit 7, Lesson 2)

5. Each lap around the track is 400 meters.

a. How many meters does someone run if they run:

2 laps?

5 laps?

x laps?

b. If Noah ran 14 laps, how many meters did he run?

c. If Noah ran 7,600 meters, how many laps did he run?

(from Unit 6, Lesson 6)

6. A stadium can seat 16,000 people at full capacity.

a. If there are 13,920 people in the stadium, what percentage of the capacity is filled? Explain or show your reasoning.

b. What percentage of the capacity is not filled?

(from Unit 3, Lesson 16)

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Unit 7, Lesson 4: Ordering Rational Numbers

1. Select **all** of the numbers that are *greater than* -5 .

A. 1.3

B. -6

C. -12

D. $\frac{1}{7}$

E. -1

F. -4

2. Order these numbers from least to greatest: $\frac{1}{2}$, 0 , 1 , $-1\frac{1}{2}$, $-\frac{1}{2}$, -1

Here are the boiling points of certain elements in degrees Celsius:

- Argon: -185.8
- Chlorine: -34
- Fluorine: -188.1
- Hydrogen: -252.87
- Krypton: -153.2

List the elements from least to greatest boiling points.

4. Explain why zero is considered its own opposite.

(from Unit 7, Lesson 2)

5. Explain how to make these calculations mentally.

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a. $99 + 54$

b. $244 - 99$

c. $99 \cdot 6$

d. $99 \cdot 15$

(from Unit 6, Lesson 9)

6. Find the quotients.

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

b. $2 \div 2$

c. $\frac{1}{2} \div \frac{1}{2}$

d. $\frac{38}{79} \div \frac{38}{79}$

(from Unit 4, Lesson 11)

7. Over several months, the weight of a baby measured in pounds doubles. Does its weight measured in kilograms also double? Explain.

(from Unit 3, Lesson 4)

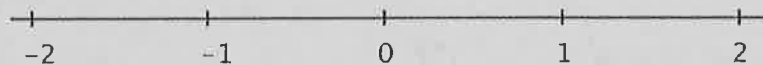
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Unit 7, Lesson 6: Absolute Value of Numbers

1. On the number line, plot and label all numbers with an absolute value of $\frac{3}{2}$.



2. The temperature at dawn is 6°C away from 0. Select **all** the temperatures that are possible.

- A. -12°C
- B. -6°C
- C. 0°C
- D. 6°C
- E. 12°C

3. Put these numbers in order, from least to greatest.

$|-2.7|$ 0 1.3 $|-1|$ 2

4. Elena donates some money to charity whenever she earns money as a babysitter. The table shows how much money, d , she donates for different amounts of money, m , that she earns.

d	4.44	1.80	3.12	3.60	2.16
m	37	15	26	30	18

- a. What percent of her income does Elena donate to charity? Explain or show your work.
- b. Which quantity, m or d , would be the better choice for the dependent variable in an equation describing the relationship between m and d ? Explain your reasoning.

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c. Use your choice from the second question to write an equation that relates m and d .

(from Unit 6, Lesson 16)

5. How many times larger is the first number in the pair than the second?

a. 3^4 is _____ times larger than 3^3 .

b. 5^3 is _____ times larger than 5^2 .

c. 7^{10} is _____ times larger than 7^8 .

d. 17^6 is _____ times larger than 17^4 .

e. 5^{10} is _____ times larger than 5^4 .

(from Unit 6, Lesson 12)

6. Lin's family needs to travel 325 miles to reach her grandmother's house.

a. At 26 miles, what percentage of the trip's distance have they completed?

b. How far have they traveled when they have completed 72% of the trip's distance?

c. At 377 miles, what percentage of the trip's distance have they completed?

(from Unit 5, Lesson 11)

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Unit 7, Lesson 7: Comparing Numbers and Distance from Zero

1. In the context of elevation, what would $|-7|$ feet mean?

2. Match the the statements written in English with the mathematical statements.

A. The number -4 is a distance of 4 units away from 0 on the number line.

1. $|-63| > 4$

B. The number -63 is more than 4 units away from 0 on the number line.

2. $-63 < 4$

3. $|-63| > |4|$

C. The number 4 is greater than the number -4 .

4. $|-4| = 4$

D. The numbers 4 and -4 are the same distance away from 0 on the number line.

5. $4 > -4$

E. The number -63 is less than the number 4.

6. $|4| = |-4|$

F. The number -63 is further away from 0 than the number 4 on the number line.

3. Compare each pair of expressions using $>$, $<$, or $=$.

a. -32 _____ 15

e. 2 _____ -17

b. $|-32|$ _____ $|15|$

f. 2 _____ $|-17|$

c. 5 _____ -5

g. $|-27|$ _____ $|-45|$

d. $|5|$ _____ $|-5|$

h. $|-27|$ _____ -45

Mai received and spent money in the following ways last month. For each example, write a signed

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number to represent the change in money from her perspective.

- Her grandmother gave her \$25 in a birthday card.
- She earned \$14 dollars babysitting.
- She spent \$10 on a ticket to the concert.
- She donated \$3 to a local charity
- She got \$2 interest on money that was in her savings account.

(from Unit 7, Lesson 5)

5. Here are the lowest temperatures recorded in the last 2 centuries for some US cities. Temperatures are in degrees Fahrenheit.

- Death Valley, CA was -45 in January of 1937.
- Danbury, CT was -37 in February of 1943.
- Monticello, FL was -2 in February of 1899.
- East Saint Louis, IL was -36 in January of 1999.
- Greenville, GA was -17 in January of 1940.

- Which of these states has the lowest record temperature?
- Which state has a lower record temperature, FL or GA?
- Which state has a lower record temperature, CT or IL?
- How many more degrees colder is the record temperature for GA than for FL?

(from Unit 7, Lesson 1)

6. Find the quotients.

- $0.024 \div 0.015$
- $0.24 \div 0.015$
- $0.024 \div 0.15$
- $24 \div 15$