1.3 Signed Numbers Name_____

Write each number as a signed number.

1. The top of a coral reef is 32 feet below sea level.

– 32 feet

2. The elevation of Mt. Shasta's peak is 14,162 feet above sea level.

3. The temperature in Redding in July is often as high as 110 degrees Fahrenheit.

+ 110 degrees

4. The temperature near the top of Mount Shasta can be as cold as 20 degrees below zero Fahrenheit.

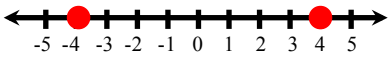
5. Elmore has overdrawn his account by $83.27

– $83.27

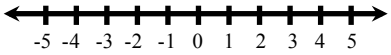
6. Morella has a balance of $1,327.42

Plot the numbers on a number line.

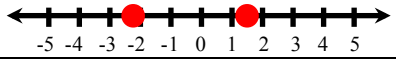
7. -4 and 4



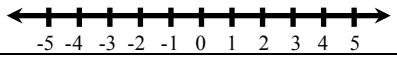
8. $2\frac{1}{2}$ and $-2\frac{1}{2}$



9. $\frac{7}{5}$ and $-\frac{9}{4}$ $\frac{7}{5} = 1\frac{2}{5}$ and $-\frac{9}{4} = -2\frac{1}{4}$



10. –1.2 and –2.87



Evaluate each absolute value.

11. $|7| = 7$

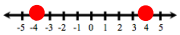
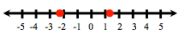
12. $|-7|$

13. $\left|-2\frac{1}{2}\right| = 2\frac{1}{2}$

14. $\left|5\frac{1}{3}\right|$

15. $-|-4| = -4$

16. $-|4|$

Answers: **1**. –32 ft; **3**. +110°; **5**. – $83.27; **7**.  ; **9**.  ; **11**. 7; **13**. $2\frac{1}{2}$; **15**. – 4

Insert the correct symbol between the following pairs of numbers, < , >, or =

17. $3 \quad > \quad 1.8$

18. $-3 \qquad 1.8$

19. $4.9 \quad > \quad 0$

20. $-5.9 \qquad 0$

21. $-3 \quad > \quad -10$

22. $-4.51 \qquad -4.32$

23. $|-5| \quad = \quad |5|$

24. $|-6| \qquad 5.2$

Write the opposite of each number or variable.

	Number	Opposite
25.	4	**– 4**
26.	–7	
27.	–2.65	**2.65**
28.	$\frac{4}{9}$	
29.	x	**$-x$**
30.	$-x$	
31.	0	**0**
32.	$\lvert -3 \rvert$	

Answers: **17.** >; **19.** >; **21.** >; **23.** =; **25.** – 4; **27.** 2.65; **29.** $-x$; **31.** 0

Write an equivalent inequality using the opposite inequality symbol. For example, $-5 < 2$ could be written equivalently as $2 > -5$.

33. $-8 > -10$

–10 < –8

34. $-3 < 1.5$

35. $2 \leq x$

$x \geq 2$

36. $3 \geq x$

Determine if each statement is true or false.

37. a) 0 is a whole number

True

b) 0 is an integer

True

c) 0 is a natural number

False

38. a) $\frac{3}{16}$ is a rational number

b) $\frac{3}{16}$ is an integer

c) $\frac{3}{16}$ is an irrational number

Answer each of the following questions with one or more of these:

a) $\mathbb{N}$, Natural Numbers
b) Whole Numbers
c) $\mathbb{Z}$, Integers
d) $\mathbb{Q}$, Rational Numbers
e) Irrational Numbers
f) $\mathbb{R}$, Real Numbers

39. This set of numbers contains all the other sets.

$\mathbb{R}$, Real Numbers

40. These two sets combined make up the Real Numbers.

41. This set contains only fractions or numbers that can be written as fractions.

$\mathbb{Q}$, Rational Numbers

42. These sets contain negative numbers.

43. These two sets do not contain zero.

$\mathbb{N}$, Natural Numbers and Irrational Numbers

44. Each of these two sets is contained in the integers.

Answers: **33.** $-10 < -8$; **35.** $x \geq 2$; **37.** **a)** T, **b)** T, **c)** F; **39.** $\mathbb{R}$; **41.** $\mathbb{Q}$; **43.** $\mathbb{N}$ and Irrational Numbers

List all the sets to which each number belongs.

a) $\mathbb{N}$, Natural Numbers
b) Whole Numbers
c) $\mathbb{Z}$, Integers
d) $\mathbb{Q}$, Rational Numbers
e) Irrational Numbers
f) $\mathbb{R}$, Real Numbers

45. $\frac{3}{7}$

$\mathbb{Q}$, Rational Numbers
$\mathbb{R}$, Real Numbers

46. -8

47. 5

$\mathbb{N}$, Natural Numbers
Whole Numbers
$\mathbb{Z}$, Integers
$\mathbb{Q}$, Rational Numbers
$\mathbb{R}$, Real Numbers

48. 0

49. $\sqrt{2}$

Irrational Numbers
$\mathbb{R}$, Real Numbers

50. -2.7

Answers: **45**. $\mathbb{Q}$ and $\mathbb{R}$; **47**. $\mathbb{N}$, Whole Numbers, $\mathbb{Z}$, $\mathbb{Q}$ and $\mathbb{R}$; **49**. Irrational Numbers, $\mathbb{R}$