

Chapter 01 Section 01: The Real Number System

MULTIPLE CHOICE

1. Determine which of the numbers in the set below are integers.

$$\left\{-8, 13, \frac{2}{5}, 10.5, -2.25\right\}$$

- a. $\{-8, 13, 10.5, -2.25\}$
b. $\left\{-8, 13, \frac{2}{5}, 10.5, -2.25\right\}$
c. $\{13\}$
d. $\left\{\frac{2}{5}, 10.5, -2.25\right\}$
e. $\{-8, 13\}$

ANS: E PTS: 1
OBJ: Classify real numbers

DIF: Easy
MSC: Concept

REF: 1.1.1a
NOT: Section 1.1

2. Determine which of the numbers in the set below are rational.

$$\left\{-11, 33, \frac{1}{11}, 5.5, -4.25\right\}$$

- a. $\left\{\frac{1}{11}\right\}$
b. $\{5.5, -4.25\}$
c. $\{-11, 33\}$
d. $\left\{-11, 33, \frac{1}{11}, 5.5, -4.25\right\}$
e. none are rational

ANS: D PTS: 1
OBJ: Classify real numbers

DIF: Easy
MSC: Concept

REF: 1.1.1c
NOT: Section 1.1

3. Use an overbar symbol to rewrite the decimal $5.438438438\dots$ using the smallest number of digits possible.

- a. $5.\overline{438}$
b. $\overline{5.4384}$
c. $\overline{5.438}$
d. $5.\overline{4384}$
e. $\overline{5.438}$

ANS: A PTS: 1

DIF: Easy

REF: 1.1.8

OBJ: Write rational numbers using an overbar symbol
NOT: Section 1.1

MSC: Skill

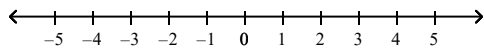
4. List all even integers between $-6 \cdot 4$ and $6 \cdot 2$.

- a. $-4, -2, 0, 2, 4$
- b. $-6, -4, -2, 2, 4, 6$
- c. $-4, -2, 2, 4,$
- d. $-6, -4, -2, 0, 2, 4, 6$
- e. $2, 4, 6$

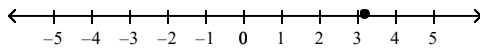
ANS: D PTS: 1 DIF: Easy
OBJ: Identify integers from an interval of real numbers
NOT: Section 1.1

REF: 1.1.10
MSC: Concept

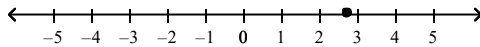
5. Plot the number $2.\overline{8}$ on the real number line.



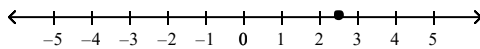
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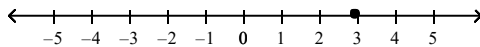
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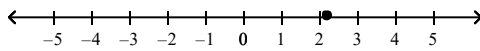
c.



d.



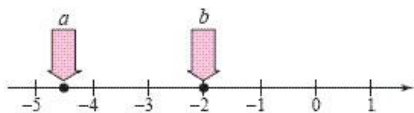
e.



ANS: B PTS: 1 DIF: Easy
OBJ: Plot a real number on a number line
NOT: Section 1.1

REF: 1.1.13d
MSC: Skill

6. Approximate the two numbers and list them in ascending order.



- a. $-4.5, 2$
- b. $-2, -4.5$
- c. $-4.5, -2$
- d. $4.5, 2$
- e. $4.5, -2$

ANS: C PTS: 1 DIF: Easy
 OBJ: Identify a specified point on a number line
 NOT: Section 1.1

REF: 1.1.15
 MSC: Skill

7. Find a true inequality that involves the real number $\frac{11}{6}$.

- a. $\frac{11}{6} < \frac{5}{6}$
- b. $\frac{11}{6} > \frac{11}{8}$
- c. $\frac{11}{6} > \frac{17}{6}$
- d. $\frac{11}{6} < \frac{11}{9}$
- e. $\frac{11}{6} < -\frac{17}{6}$

ANS: B PTS: 1 DIF: Medium
 OBJ: Write an inequality involving a specified real number
 NOT: Section 1.1

REF: 1.1.26
 MSC: Skill

8. Find a true inequality that involves the real number $-\frac{10}{7}$.

- a. $-\frac{10}{7} > \frac{3}{7}$
- b. $-\frac{10}{7} < -\frac{17}{7}$
- c. $-\frac{10}{7} < -\frac{4}{3}$
- d. $\frac{10}{7} > -\frac{7}{6}$
- e. $-\frac{10}{7} > -\frac{3}{7}$

ANS: C PTS: 1 DIF: Medium
 OBJ: Write an inequality involving a specified real number
 NOT: Section 1.1

REF: 1.1.27
 MSC: Skill

9. Find the distance between 3 and 0 on the real number line.

- a. 0
- b. 1
- c. 1.5
- d. -3
- e. 3

ANS: E PTS: 1 DIF: Easy REF: 1.1.37

OBJ: Calculate the distance between points on the real number line

MSC: Skill NOT: Section 1.1

10. Find the distance between -4 and 0 on the real number line.

- a. 1
- b. 2
- c. -4
- d. 4
- e. 0

ANS: D PTS: 1 DIF: Easy REF: 1.1.38

OBJ: Calculate the distance between points on the real number line

MSC: Skill NOT: Section 1.1

11. Find the distance between -13 and -6 .

- a. 19
- b. 9
- c. 6
- d. 7
- e. 8

ANS: D PTS: 1 DIF: Easy REF: 1.1.40

OBJ: Calculate the distance between points on the real number line

MSC: Skill NOT: Section 1.1

12. Evaluate $|2|$.

- a. $-\frac{1}{2}$
- b. $\frac{1}{2}$
- c. 2
- d. -2
- e. 0

ANS: C PTS: 1 DIF: Easy REF: 1.1.41

OBJ: Evaluate an absolute value

MSC: Skill

NOT: Section 1.1

13. Evaluate $-|-9.25|$.

- a. 0.25
- b. -9.25

- c. 0
- d. 9.25
- e. -0.25

ANS: B PTS: 1
OBJ: Evaluate an absolute value

DIF: Medium
MSC: Skill

REF: 1.1.46
NOT: Section 1.1

14. Evaluate $-|4|$.

- a. 0
- b. 4
- c. 1
- d. -4
- e. 16

ANS: D PTS: 1
OBJ: Evaluate an absolute value

DIF: Easy
MSC: Skill

REF: 1.1.47
NOT: Section 1.1

15. Evaluate $-|3.75|$.

- a. 3.75
- b. 0.75
- c. -0.75
- d. 0
- e. -3.75

ANS: E PTS: 1
OBJ: Evaluate an absolute value

DIF: Medium
MSC: Skill

REF: 1.1.51
NOT: Section 1.1

16. Evaluate $|-11.5|$.

- a. 0.5
- b. -11.5
- c. -11
- d. 11
- e. 11.5

ANS: E PTS: 1
OBJ: Evaluate an absolute value

DIF: Easy
MSC: Skill

REF: 1.1.52
NOT: Section 1.1

17. Choose the correct expression.

- a. $|-9| = |9|$
- b. $|-9| < |9|$
- c. $|-9| > |9|$

ANS: A PTS: 1
OBJ: Write an inequality involving the absolute value of real numbers
MSC: Skill NOT: Section 1.1

DIF: Easy

REF: 1.1.56

18. Choose the correct expression.

- a. $\left| -\frac{1}{7} \right| < \left| \frac{2}{5} \right|$
- b. $\left| -\frac{1}{7} \right| > \left| \frac{2}{5} \right|$
- c. $\left| -\frac{1}{7} \right| = \left| \frac{2}{5} \right|$

ANS: B PTS: 1 DIF: Easy REF: 1.1.61
 OBJ: Write an inequality involving the absolute value of real numbers
 MSC: Skill NOT: Section 1.1

19. Find the opposite of the real number 5.

- a. $\frac{1}{5}$
- b. -5
- c. $-\frac{1}{5}$
- d. 5
- e. 1

ANS: B PTS: 1 DIF: Easy REF: 1.1.66
 OBJ: Write the opposite of a real number
 NOT: Section 1.1

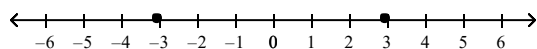
20. Find the opposite of the real number $\frac{5}{9}$.

- a. $\frac{9}{5}$
- b. $-\frac{9}{5}$
- c. $\frac{5}{9}$
- d. $-\frac{5}{9}$
- e. -4

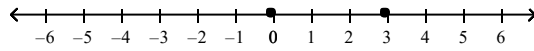
ANS: D PTS: 1 DIF: Easy REF: 1.1.69
 OBJ: Write the opposite of a real number
 NOT: Section 1.1

21. Plot 3 and its opposite on the real number line.

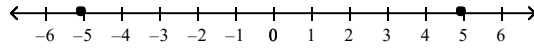
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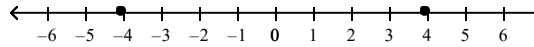
b.



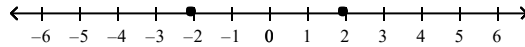
c.



d.



e.



ANS: A

PTS: 1

DIF: Easy

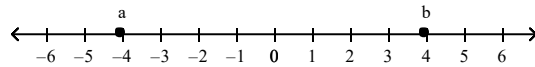
REF: 1.1.75

OBJ: Plot a real number and its opposite on a number line

MSC: Skill

NOT: Section 1.1

22. Determine the distance from each point to zero.



a. distance from 0 to a : 5

distance from 0 to b : 5

b. distance from 0 to a : 3

distance from 0 to b : 3

c. distance from 0 to a : 4

distance from 0 to b : 4

d. distance from 0 to a : 9

distance from 0 to b : 8

e. distance from 0 to a : 8

distance from 0 to b : 4

ANS: C

PTS: 1

DIF: Easy

REF: 1.1.76

OBJ: Calculate the distance of a real number from zero on a number line

MSC: Skill

NOT: Section 1.1

23. Write an inequality to describe the following statement:

The tire pressure p is at least 27 pounds per square inch and no more than 34 pounds per square inch.

a. $27 \leq p \leq 34$

b. $27 \leq p \geq 34$

c. $27 = p$

d. $27 < p < 34$

e. $27 > p \geq 34$

ANS: A

PTS: 1

DIF: Easy

REF: 1.1.88

OBJ: Write an inequality from a statement

MSC: Application

NOT: Section 1.1