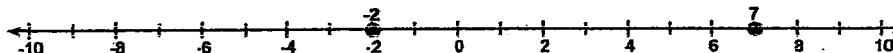


# Practice 8-2

## Comparing and Ordering Integers

1. Use the number line to compare 7 and -2.



Which inequality compares 7 and -2 correctly?

- ☐ A.  $7 > -2$  ☐ B.  $7 < -2$

2. Which inequality compares -3 and -1 correctly?

- ☐ A.  $-3 < -1$  ☐ B.  $-3 > -1$

3. One day last winter, the temperature was  $-7^{\circ}\text{C}$  at 8 A.M. The temperature was  $-10^{\circ}\text{C}$  at 5 P.M. Which inequality compares -7 and -10 correctly?

- ☐ A.  $-7 > -10$  ☐ B.  $-7 < -10$

A, B, or E

4. Last night, some friends played a board game. They played two rounds. In the first round, one player lost 16 points. In the second round, the same player gained 13 points. Which inequality compares the player's points in the two rounds?

- ☐ A.  $16 > -13$  ☐ E.  $-16 < 13$   
☐ B.  $-16 < -13$  ☐ F.  $-16 > -13$   
☐ C.  $-16 > 13$  ☐ G.  $16 < 13$   
☐ D.  $16 < -13$  ☐ H.  $16 > 13$

5. The table shows the number of yards gained or lost by a football team on its first play with the ball in each of five games. Positive numbers represent yards gained. Negative numbers represent yards lost.

| First-Play Results |           |          |          |         |         |
|--------------------|-----------|----------|----------|---------|---------|
| Game               | 1         | 2        | 3        | 4       | 5       |
| Result             | -12 yards | 12 yards | -8 yards | 9 yards | 4 yards |

- a) Which list shows the numbers ordered from greatest to least?

- ☐ A. -8, 4, 12, -12, 9 ☒ C. ~~-12, -8, 4, 9, 12~~  
☐ B. 12, 4, -12, -8, 9 ☐ D. 12, 9, 4, -8, -12

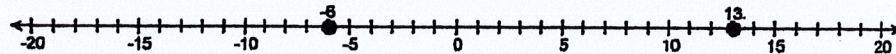
- b) In which game did the team do best on its first play? (most yards)

6. Five friends played a board game. The table shows their scores at the end of the game.

| Scores |           |          |           |          |          |
|--------|-----------|----------|-----------|----------|----------|
| Person | Adam      | Brenda   | Carrie    | Daniel   | Emily    |
| Score  | -3 points | 7 points | -2 points | 8 points | 9 points |

- a) Which list shows the numbers ordered from least to greatest?
- ☐ A. 9, 8, 7, -2, -3                      ☐ C. -2, 7, 9, -3, 8
- ☐ B. -3, -2, 7, 8, 9                      ☐ D. 9, 7, -3, -2, 8
- b) if the person with the highest score won, who finished in second place?

7. Multiple Representations Use the number line to compare 13 and -6.



Which inequalities compare 13 and -6 correctly? Check all that apply. (2)

- ☒ A.  $13 < -6$                       ☐ D.  $13 = -6$
- ☐ B.  $13 > -6$                       ☐ E.  $-6 < 13$
- ☐ C.  $-6 > 13$

Lucinda  $4 > -2$

Marco  $4 < -2$

Who is incorrect?  
(C or D)

8. Error Analysis Lucinda and Marco compare 4 and -2. Lucinda claims that 4 is to the right of -2 on a number line, and so  $4 > -2$ . Marco claims that 4 is to the left of -2 on a number line, and so  $4 < -2$ . Who is incorrect and what is the error?
- ☐ A. Lucinda is incorrect. Because 4 is to the right of -2 on a number line, the inequality should be  $4 < -2$ .
- ☐ B. Marco is incorrect. Because 4 is to the left of -2 on a number line, the inequality should be  $4 > -2$ .
- ☐ C. Marco is incorrect. On a number line, 4 is not to the left of -2.
- ☐ D. Lucinda is incorrect. On a number line, 4 is not to the right of -2.

9. Freezing Points A scientist has two different liquids in glass jars. Liquid A freezes at a temperature of  $-14^{\circ}\text{C}$ . Liquid B freezes at a temperature of  $-7^{\circ}\text{C}$ .

- a) Write an inequality to compare these two temperatures.  $-14 < -7$
- b) Which liquid freezes at a colder temperature? Liquid A ( $-14^{\circ}$ ) or Liquid B ( $-7^{\circ}$ )

10. Reasoning Sunday at noon, the temperature was 5 degrees below zero. Wednesday at noon, the temperature was 7 degrees above zero.

- a) Which inequality compares the two integers for this situation correctly?

A, B, or C

- ☐ A.  $5 < 7$                       ☒ E.  $5 > 7$
- ☐ B.  $-5 < 7$                       ☒ F.  $5 > 7$
- ☒ C.  $5 < 7$                       ☐ G.  $-5 > 7$
- ☒ D.  $5 < 7$                       ☒ H.  $5 < 7$

- b) On which day was it warmer? Sunday or Wednesday?

☒ Describe two ways by which you can reach your conclusion.



11. Writing The table shows the lowest temperatures last year for five cities.

| Lowest Temperatures Recorded Last Year |                       |                       |                      |                      |                      |
|--|-----------------------|-----------------------|----------------------|----------------------|----------------------|
| City                                   | A                     | B                     | C                    | D                    | E                    |
| Temperature                            | $-18^{\circ}\text{C}$ | $-24^{\circ}\text{C}$ | $10^{\circ}\text{C}$ | $-8^{\circ}\text{C}$ | $-4^{\circ}\text{C}$ |

- a) Which list shows the numbers ordered from least to greatest?

☐ A. 10, -4, -8, -18, -24      ☐ C. -24, -18, -8, -4, 10  
☐ B. 10, -8, -24, -18, -4      ☐ D. -18, -8, 10, -24, -4

- b) Which city had the lowest temperature? City A or City B

~~c) Describe two methods you can use to order this set of numbers.~~

12. a) Which inequality below compares 1 and -7 correctly?

☐ A.  $1 > -7$       ☐ B.  $1 < -7$

~~b) Explain how you can make the comparison without plotting points on a number line.~~

13. Mental Math Five people started an exercise program. Each person ran 10 laps around a track and recorded the time. After doing this daily for two months, each person ran another 10 laps around the same track and recorded the time. The table shows the change from the first time to the second time for each person.

| Changes in Times |                  |
|------------------|------------------|
| Person           | Change (seconds) |
| A                | 20               |
| B                | -30              |
| C                | -20              |
| D                | 30               |
| E                | -10              |

- a) Which list below shows the numbers ordered from least to greatest?

☐ A. 30, 20, -10, -20, -30      ☐ C. -30, -20, -10, 20, 30  
☐ B. -20, -10, 30, -30, 20      ☐ D. 30, -10, -30, -20, 20

- b) Which person's time decreased the most? Person B or Person C

14. Think About the Process One day, a boy found \$17. The next day, he spent \$12. Find two integers to represent these situations. How do you know which integers to use?

- a) Since the word "found" suggests a positive/negative number, use the integer 17/-17 to represent the situation "a boy found \$17." +17 or -17

Since the word "spent" suggests a positive/negative number, use the integer 12/-12 to represent the situation "he spent \$12." +12 or -12

- b) Which inequality below compares the two integers?

☐ A.  $17 > -12$       ☒ E.  $-17 > 12$   
☐ B.  $-17 > -12$       ☒ F.  $17 < -12$   
☐ C.  $17 < 12$       ☒ G.  $-17 < 12$   
☐ D.  $-17 < -12$       ☒ H.  $17 > 12$

15. Think About the Process Last winter, a neighbor recorded the outside temperature each day at 8 A.M. for a week. The table shows these temperatures.

| Temperatures at 8 A.M. |                                    |
|------------------------|------------------------------------|
| Day                    | Temperature ( $^{\circ}\text{C}$ ) |
| Sun.                   | -5                                 |
| Mon.                   | 2                                  |
| Tues.                  | -3                                 |
| Wed.                   | 6                                  |
| Thurs.                 | 4                                  |
| Fri.                   | -7                                 |
| Sat.                   | -4                                 |

- a) Think about how you arrange numbers in order by plotting them on a number line. Which list below shows the numbers ordered from greatest to least?

- ☐ A. -7, -5, -4, -3, 2, 4, 6  
☐ B. 6, 2, -4, -5, -3, -7, 4  
☐ C. 6, 4, 2, -3, -4, -5, -7  
☐ D. -5, -3, 2, -7, 6, -4, 4

B or C

- b) How can you always tell which day was the coldest?

- ☐ A. Find the day that corresponds to the number farthest right on the number line.  
☐ B. Find the day that corresponds to the middle number on the number line.  
☐ C. Find the day that corresponds to the number farthest from 0 on the number line.  
☐ D. Find the day that corresponds to the number farthest left on the number line.

A or D

- c) Which day was coldest?