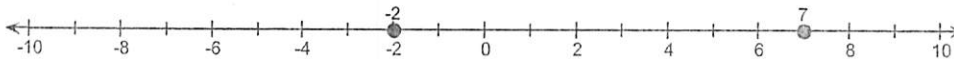


**Practice
8-2**

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°C at 8 A.M. The temperature was -10°C at 5 P.M. Which inequality compares -7 and -10 correctly?
- A. $-7 > -10$
 - B. $-7 < -10$
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. $16 > -13$
 - B. $-16 < -13$
 - C. $-16 > 13$
 - D. $16 < -13$
 - E. $-16 < 13$
 - F. $-16 > -13$
 - G. $16 < 13$
 - 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

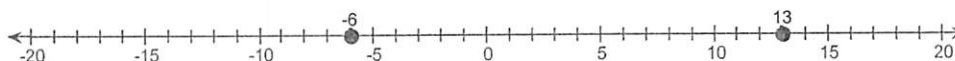
- a) Which list shows the numbers ordered from greatest to least?
- A. -8, 4, 12, -12, 9
 - B. 12, 4, -12, -8, 9
 - C. -12, -8, 4, 9, 12
 - D. 12, 9, 4, -8, -12
- b) In which game did the team do best on its first play?
- _____

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.

- A. $13 < -6$ D. $13 = -6$
 B. $13 > -6$ E. $-6 < 13$
 C. $-6 > 13$
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°C . Liquid B freezes at a temperature of -7°C .

a) Write an inequality to compare these two temperatures.

b) Which liquid freezes at a colder temperature? _____

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. $5 < 7$ 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?

c) 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°C	-24°C	10°C	-8°C	-4°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? _____

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

12. Roberto and Jeanne played a new computer game. The game was more difficult than they expected. Roberto's final score was -60 points. Jeanne's final score was -160 points.

a) Write an inequality to compare these two scores.

b) Who had the higher final score?

13. **Mental Math** The table shows the final scores for five contestants in a video game tournament. Order the numbers from least to greatest.

Final Scores in Video Game Tournament					
Contestant	A	B	C	D	E
Score	250	-450	-700	500	400

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

A. 500, 250, -700, -450, 400

C. 500, 400, 250, -450, -700

B. -450, 250, 500, -700, 400

D. -700, -450, 250, 400, 500

b) If the contestant with the highest score won the tournament, which contestant won?

c) By how many points was the highest score greater than the lowest score?

14. **Challenge** At 10 A.M. one day, the temperature was 7 degrees above zero. The temperature was 2 degrees higher at noon. The next day, the temperature was 6 degrees below zero at 10 A.M. At noon, the temperature was 4 degrees higher. Which inequality compares the two temperatures at noon?

A. $7 < -6$

B. $-7 < 6$

C. $9 > -2$

D. $-7 > 6$

E. $7 > -6$

F. $-9 < 2$

G. $9 < -2$

H. $-9 > 2$

15. **Challenge** In a park, four trails start from the same point. The elevation of that point is 0 ft. As you hike along each trail, the elevation changes.

The elevation along trail A first increases 30 ft and then decreases 90 ft.

The elevation along trail B first decreases 85 ft and then increases 65 ft.

The elevation along trail C first increases 75 ft and then decreases 15 ft.

The elevation along trail D first decreases 50 ft and then increases 80 ft.

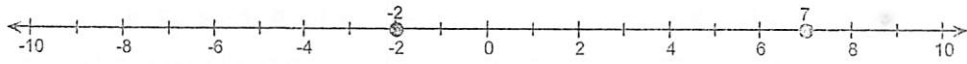
a) Find the integers that represent the elevations at the end of each trail. Order the integers from greatest to least.

b) Which trail ends at the greatest elevation?

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. $7 < -2$

7 is greater than -2

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

- A. $-3 < -1$
- B. $-3 > -1$

-3 is less than -1

3. One day last winter, the temperature was -7°C at 8 A.M. The temperature was -10°C at 5 P.M. Which inequality compares -7 and -10 correctly?

- A. $-7 > -10$
- B. $-7 < -10$

-7 is greater than -10

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

lost 16 \rightarrow -16
gained 13 \rightarrow 13

-16 is less than 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
 - B. 12, 4, -12, -8, 9
 - C. -12, -8, 4, 9, 12
 - D. 12, 9, 4, -8, -12

b) In which game did the team do best on its first play?

Game 2 (gained 12 yards)

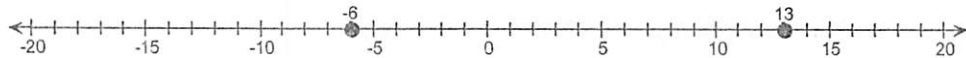
6. Five friends played a board game. The table shows their scores at the end of the game.

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?

Daniel

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



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

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

13 is greater than -6

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?

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9. Freezing Points A scientist has two different liquids in glass jars. Liquid A freezes at a temperature of -14°C . Liquid B freezes at a temperature of -7°C .

- a) Write an inequality to compare these two temperatures.

$-14^{\circ}\text{C} < -7^{\circ}\text{C}$

- b) Which liquid freezes at a colder temperature? Liquid A

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

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

- 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?

Wednesday

c) Describe two ways by which you can reach your conclusion.

① Look at a number line

② Recognize below 0 temperatures are colder than above 0 temperatures.

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°C	-24°C	10°C	-8°C	-4°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? B

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

12. Roberto and Jeanne played a new computer game. The game was more difficult than they expected. Roberto's final score was -60 points. Jeanne's final score was -160 points.

a) Write an inequality to compare these two scores.

-60 > -160 or -160 < -60

b) Who had the higher final score?

Roberto

13. Mental Math The table shows the final scores for five contestants in a video game tournament. Order the numbers from least to greatest.

Final Scores in Video Game Tournament					
Contestant	A	B	C	D	E
Score	250	-450	-700	500	400

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

A. 500, 250, -700, -450, 400

C. 500, 400, 250, -450, -700

B. -450, 250, 500, -700, 400

D. -700, -450, 250, 400, 500

b) If the contestant with the highest score won the tournament, which contestant won?

D

c) By how many points was the highest score greater than the lowest score?

-700

500

1200 points

14. Challenge At 10 A.M. one day, the temperature was 7 degrees above zero. The temperature was 2 degrees higher at noon. The next day, the temperature was 6 degrees below zero at 10 A.M. At noon, the temperature was 4 degrees higher. Which inequality compares the two temperatures at noon?

A. $7 < -6$

E. $7 > -6$

B. $-7 < 6$

F. $-9 < 2$

C. $9 > -2$

G. $9 < -2$

D. $-7 > 6$

H. $-9 > 2$

15. Challenge In a park, four trails start from the same point. The elevation of that point is 0 ft. As you hike along each trail, the elevation changes.

A $+30 - 90 = -60$

The elevation along trail A first increases 30 ft and then decreases 90 ft. ~~130/60~~

B $-85 + 65 = -20$

The elevation along trail B first decreases 85 ft and then increases 65 ft.

C $+75 - 15 = +60$

The elevation along trail C first increases 75 ft and then decreases 15 ft.

D $-50 + 80 = +30$

The elevation along trail D first decreases 50 ft and then increases 80 ft.

a) Find the integers that represent the elevations at the end of each trail. Order the integers from greatest to least.

60, 30, -20, -60

b) Which trail ends at the greatest elevation?

Trail C