

# Distance vs Displacement Practice:

Name: Key

For each scenario, state the distance and displacement.

1. A cheetah chases a gazelle 135 m west then drags the gazelle back 135 m east to where it started.

Distance:  $135\text{ m} + 135\text{ m} = \boxed{270\text{ m}}$

Displacement:  $\boxed{0\text{ m}}$

2. Joe rides his bike from his home to the grocery store which is 0.5 miles east of his home. From the grocery store, he rides to the post office which is 1.4 miles east of the grocery store.

Distance:  $0.5\text{ miles} + 1.4\text{ miles} = \boxed{1.9\text{ mi}}$

Displacement:  $\boxed{1.9\text{ mi East}}$

3. Blake walks 5 blocks east of his apartment, stops for a newspaper, and then continues walking east for 4 more blocks. Then, he turns around and walks 7 blocks to the west to get a coffee.

Distance:  $5\text{ blocks} + 4\text{ blocks} + 7\text{ blocks} = \boxed{16\text{ blocks}}$

Displacement:  $5\text{ blocks E} + 4\text{ blocks E} = 9\text{ blocks E} - 7\text{ blocks W} = \boxed{2\text{ blocks E}}$

4. Mrs. Mikula runs 12 m north to stop a student from leaving school. She then brings the student 18 m south back to their class.

Distance:  $12\text{ m} + 18\text{ m} = \boxed{30\text{ m}}$

Displacement:  $12\text{ m N} - 18\text{ m S} = \boxed{6\text{ m S}}$

5. The wind pushes a sailboat 20 m to the north, 30 m to the south, 50 m to the north and 20 m to the south.

Distance:  $20\text{ m} + 30\text{ m} + 50\text{ m} + 20\text{ m} = \boxed{120\text{ m}}$

Displacement:  $20\text{ m N} + 50\text{ m N} = 70\text{ m N}$

$30\text{ m S} + 20\text{ m S} = 50\text{ m S}$

$\boxed{20\text{ m N}}$

6. Mrs. Beckerman walks down the zero hall of Pope which is 43 m long. She then remembers she left her handouts in the office at the other end of the hall. She turns around and goes back to where she began.

Distance:  $43\text{ m} + 43\text{ m} = \boxed{86\text{ m}}$

Displacement:  $\boxed{0\text{ m}}$

7. Josh travels 18 meters north, then 6 meters south, then 12 meters north, and finally, 4 meters south.

Distance:  $18\text{ m} + 6\text{ m} + 12\text{ m} + 4\text{ m} = \boxed{40\text{ m}}$

Displacement:  $18\text{ m N} + 12\text{ m N} = 30\text{ m N}$

$6\text{ m S} + 4\text{ m S} = 10\text{ m S}$

$\boxed{20\text{ m N}}$

8. An astronaut on the surface of the moon leaps 6 ft above the surface and lands in his original spot.

Distance:  $6\text{ ft} + 6\text{ ft} = \boxed{12\text{ ft}}$

Displacement:  $\boxed{0\text{ ft}}$

9. A car travels 190 miles to deliver a package. It turns around and goes right back to where it came from.

Distance:  $190\text{ mi} + 190\text{ mi} = \boxed{380\text{ miles}}$

Displacement:  $\boxed{0\text{ miles}}$

10. The mailman delivers mail to a neighborhood. Each mailbox is 14 meters apart and there are 6 mailboxes. When the mailman is done delivering, he drives back to the second house where he lives.

Distance:  $14\text{ m} \times 5 = 70\text{ m}$   
 $14\text{ m} \times 4 = 56\text{ m}$   
 $= \boxed{126\text{ m}}$

Displacement:  $\boxed{14\text{ m}}$

