# Negative Numbers **Answers**

1. Cake on floor 2.
2. Book on floor -2.
3. Hat on floor -4.
4. CD on floor 5.
5. Lamp on floor -1 and -6 floors or 6 floors down.
6. Paint on floor 3.
7. 3 floors. He is going down.

**Challenge**

Denis hasn't delivered to floors -5, -3, 1, 4.

Denis needs to go to floor 4 because 5 is a bigger number that 4, but the floor is -5 (a negative number), so it has a smaller value than +4 (a positive number).

# Negative Numbers **Answers**

1. Floor
2. Floor -2.
3. Floor -5.
4. Floor 5.
5. Floor -1 and -6 floors or 6 floors down.
6. Floor 4.
7. Floor -3.
8. Floor 1 and +4 floors or 4 floors up.
9. Floor -4.
10. Floor 6 and 10 floors. He is going up.

**Challenge**

62

If Denis started at the ground floor and went up in order to the floors he had parcels for he would go to floors 1, 2, 4, 5 and 6, stopping or passing 6 floors. If he then went down to basement floor -5 he would travel past 11 floors. If he then delivered to floors -4, -3, -2, -1, and finished back on the ground floor he would have visited another 5 floors.

6+11+5= 22 floors.

# Negative Numbers **Answers**

1. Floor 7.
2. Floor -3.
3. Floor 4.
4. Floor -9 is 13 floors down.
5. Floor -4
6. Floor -4 to -10 is 6 floors by stair. Then, floor -10 to 6 is 16 floors by lift.
7. Floor -4 to 6 is 10 floors by stair. Then floor 6 to floor -10 is 16 floors by lift.
8. Denis should use the stairs to floor -10, then lift to floor 6.
9. Reception is 6 floors down.
10. Denis finishes on basement floor -7.
11. He must travel either 8 or 6 floors by lift as there is no lift on floor -7.
12. Denis has not visited 11 of the floors in the building.

**Challenge**

The floors that he needs to use the stairs for are the odd numbered floors.

These are; -5, -1, 1, 3 and 9. Denis needs to use the stairs to deliver to 5 floors so he needs to use 10 flights of stairs (a flight to get from the lift to the odd numbered floor, then another flight from the odd numbered floor back to the lift.)

This could be shown in a table below, or reasoned.

| Stairs from | Stairs to |
|---|---|
| -6 | -5 |
| -5 | -4 (lift) |
| -2 | -1 |
| -1 | 0 |
| 0 | 1 |
| 1 | 2 |
| 2 | 3 |
| 3 | 4 (lift) |
| 8 | 9 |
| 9 | 10 (lift) |