

Negative Numbers

Aim: Count forwards and backwards past zero into negative numbers. Solve problems using negative numbers and give reasons for answers.

Denis the Delivery Man

Denis has six parcels to deliver in a block of flats. The deliveries need to be made in a certain order depending on when people are at home. The flats have floors above and below ground level. As Denis delivers the parcels, write what he delivers at the floors he visits in the order that he makes the deliveries. Remember to use the negative value to mark the basement floors.

	Floor ____ Order ____ Parcel ____
	Floor 4
	Floor ____ Order ____ Parcel ____
	Floor ____ Order ____ Parcel ____
	Floor ____ Order ____ Parcel ____
	Floor 0
	Floor ____ Order ____ Parcel ____
	Floor ____ Order ____ Parcel ____
	Floor ____ Order ____ Parcel ____
	Floor ____ Order ____ Parcel ____
	Floor -5

1. Denis starts on the ground floor (0) and his first delivery is a cake on floor 2.
2. He then goes down 4 floors to deliver a book.
3. Denis has to go down another 2 floors next to deliver a hat.
4. Once that parcel is delivered, he travels up 9 floors to deliver a CD.
5. After that, Denis goes down to basement level -1 to deliver a lamp.
How many floors has he travelled to get there? _____
6. Up he goes again. This time 4 floors up to deliver some paint. Mark which floor he is at now.
7. Denis has done his last delivery. How many floors must he travel to get back to the ground floor (0)? In which direction is he going? _____

Challenge

Which floors has Denis not delivered to?

Denis finds another parcel in his bag. It does not have a floor number on it but it does give him a clue. It says 'Deliver me to the floor with the largest number'. Which floor does Denis need to go to? Explain how you know.

Negative Numbers

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Denis the Delivery Man

Denis has 10 parcels to deliver in a block of flats. The deliveries need to be made in a certain order depending on when people are at home. The flats have floors above and below ground level. As Denis delivers the parcels, mark the floors he visits in the order that he makes the deliveries. Remember to use the negative value to mark the basement floors.

	Floor ____	Order ____
	Floor ____	Order ____
	Floor ____	Order ____
	Floor 3	
	Floor ____	Order ____
	Floor ____	Order ____
	Floor 0	
	Floor ____	Order ____
	Floor ____	Order ____
	Floor ____	Order ____
	Floor ____	Order ____
	Floor ____	Order ____
	Floor -6	

1. Denis starts on the ground floor (0) and his first delivery is on floor 2.
2. He then goes down 4 floors.
3. Denis has to go down another 3 floors next.
4. Once that parcel is delivered, he travels up 10 floors.
5. After that, Denis goes down to basement level -1.
How many floors has he travelled to get there? _____
6. Up he goes again. This time 5 floors up. Mark which floor he is at now.
7. Back down 7 floors. Where is he now? _____
8. Up to floor 1 next. How many floors has Denis gone up this time? _____

9. Finally, back down 5 floors.
10. Where is Denis' last delivery? _____ How many floors must he travel to get there? _____ In which direction is he going? _____

Challenge

If he starts and finishes his round at ground level (Floor 0), how many floors has Denis stopped at or travelled past on his delivery round today? _____

Denis thinks he could have done his round travelling to fewer floors. Do you agree?
Give reasons for your answer.

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Denis the Delivery Man

Denis has 10 parcels to deliver in a block of flats. The deliveries need to be made in a certain order depending on when people are at home. The flats have floors above and below ground level. The lift only stops at even numbered floors and Denis has to use the stairs to the odd numbered floors.

	Floor ____	Order ____
	Floor ____	Order ____
	Floor ____	Order ____
	Floor ____	Order ____
	Floor ____	Order ____
	Floor ____	Order ____
	Floor ____	Order ____
	Floor 3	
	Floor ____	Order ____
	Floor ____	Order ____
	Floor 0	
	Floor ____	Order ____
	Floor ____	Order ____
	Floor ____	Order ____
	Floor ____	Order ____
	Floor ____	Order ____
	Floor -6	
	Floor ____	Order ____
	Floor ____	Order ____
	Floor ____	Order ____
	Floor ____	Order ____

As Denis delivers the parcels, mark the floors he visits in the order that he makes the deliveries. Remember to use the negative value to mark the basement floors.

1. Denis starts his delivery at floor 7.
2. He then needs to travel down 10 floors. Where is he now? _____
3. Up he goes 7 floors for his next delivery.
4. He now delivers to basement floor -9. How far has he travelled? In which direction has he travelled? _____
5. He then climbs up 5 floors. Mark the floor on the scale.
6. For his next two deliveries, Denis must use the stairs for his first delivery; he must use the lift for the other journey. He wants to choose the journey with the least amount of stairs to walk. If he has a parcel for floor 6 and floor -10, which delivery must he go to using the lift? Explain your answer. _____

7. Denis has delivered 7 parcels now and he must go to reception on the ground floor to pick up his last three deliveries. How many floors must he travel? _____
8. Two parcels are for floor 5, the final parcel is for 12 floors below that. Where does Denis finish his deliveries? _____
9. How many floors must Denis travel by lift to get back to the ground floor? _____
10. How many floors has Denis not visited on his delivery round? _____

Challenge

If Denis now has to start at the lowest floor and deliver parcels to every floor that he hasn't delivered parcels to, how many flights of stairs would he need to use? He must always be walking up the stairs. Show how you worked this out.

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