

Section 2: Inequalities



Exercise level 3 (Extension)

1. John is less than half his mother's age, though the sum of their ages is greater than sixty. John was born on his mother's twenty-sixth birthday.
By expressing these facts as two inequalities and one equation, find the range of possible ages for John.
2. A room in a new hotel is designed so that its length x metres is 3 metres greater than its width. Because of the budget for carpet, the area is to be no more than 88 square metres, while for display purposes the perimeter of the room must be at least 30 metres.
Write down two inequalities, and find the possible values for x .
3. A work of art includes a large cone. The volume of the cone is to be at most 25 cubic metres, and the length of the slant height of the cone is to be less than twice the radius. Write down two inequalities, and find the maximum height of the cone, to 3 significant figures.