

**YOU & MATHS** A consultant can be paid in two manners. Plan A: \$ 30 per hour; Plan B: \$ 400 plus \$ 20 per hour.  
Suppose the job takes  $n$  hours. For what values of  $n$  is Plan A better for the consultant than Plan B?

Let's calculate the consultant's total pay under each of the plans.

Plan A: the consultant receives \$ 30 per hour, so in  $n$  hours she will earn

$$\$ 30 \cdot n.$$

Plan B: the consultant receives \$ 400, plus \$ 20 per hour, so in  $n$  hours she will earn

$$\$ 400 + 20 \cdot n.$$

To know when Plan A is the better choice, that is, when the consultant will earn more under plan A than under plan B, let's study the following inequality:

$$30 \cdot n > 400 + 20 \cdot n, 10 \cdot n > 400, n > 40.$$

Plan A is better when the consultant works more than 40 hours.