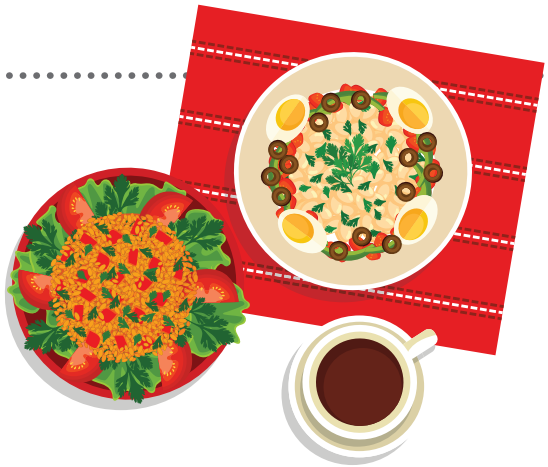
CRITICAL PATH ANALYSIS

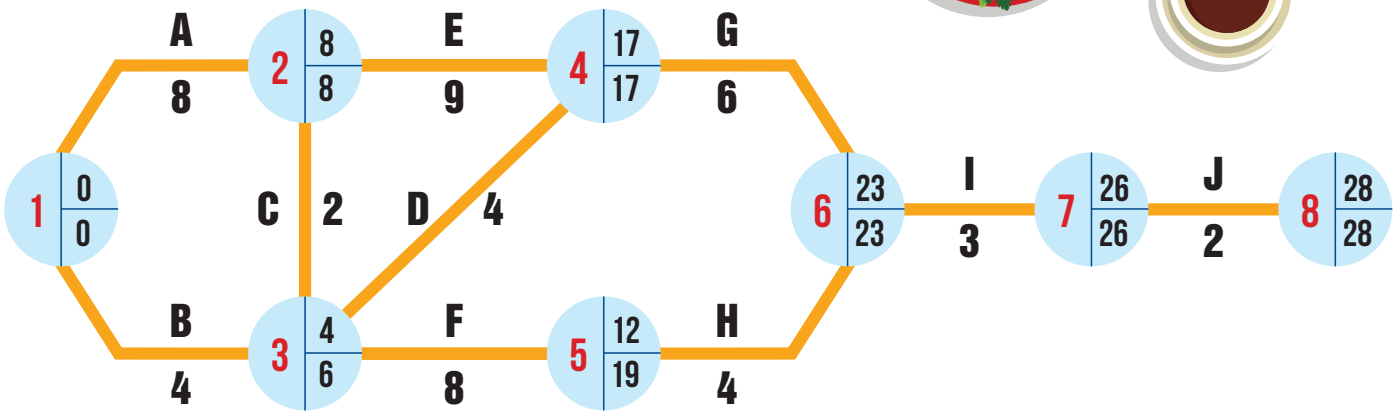
CALCULATION PRACTICE

tutor2u



Activity 1 – Lebaneser Scrooge

Lebaneser Scrooge is a Lebanese restaurant located in County Durham. The owners of the business are considering opening a second restaurant in Newcastle and they have constructed the network diagram below. All activities are in weeks.



Question 1

Based on the above diagram, the total float for activity D is:

A	2 weeks	☐
B	7 weeks	☐
C	9 weeks	☐
D	10 weeks	☐

Question 2

Based on the above diagram, if activity C is delayed by 3 weeks, the duration of the critical path:

A	Increases by 1 week	☐
B	Increases by 3 weeks	☐
C	Increases by 5 weeks	☐
D	Increases by 7 weeks	☐

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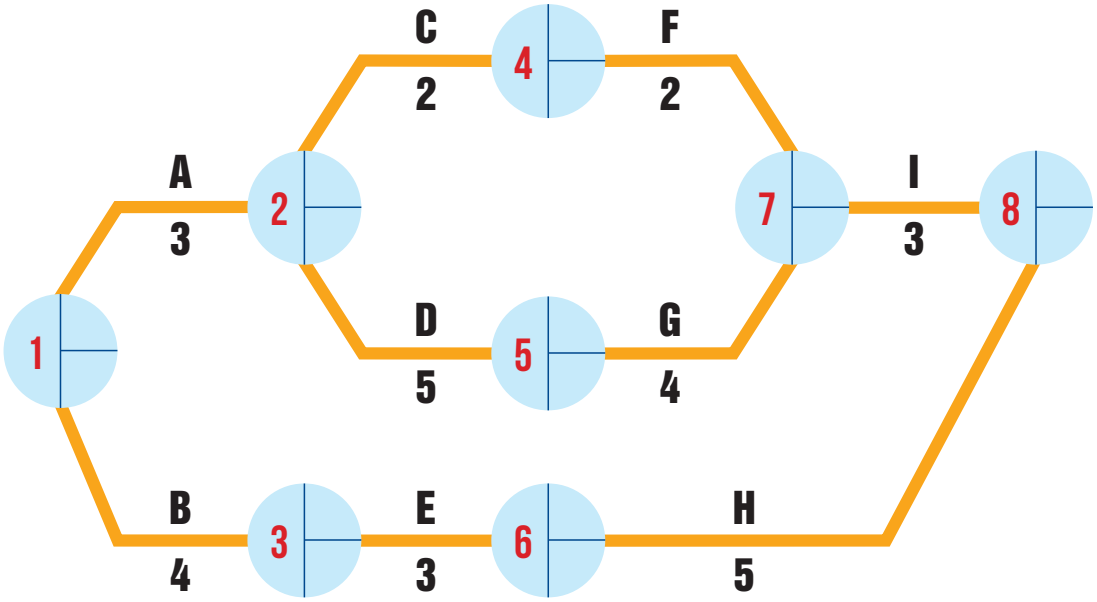
Activity 2 – Dwayne Pipe Ltd

Dwayne Pipe is the owner of Dwayne Pipe Ltd, a manufacturer of plumbing supplies. Due to an increase in demand, Dwayne is looking at increasing capacity by building a larger factory. Dwayne has constructed the network diagram below to plan the construction of the new factory. All activities are in weeks.

Question 1

Using the data in the network below, calculate the Earliest Start Times (EST) and the Latest Finish Times (LFT) for each activity and complete the network diagram.



Question 2

Write down the critical path.

Question 3

Calculate the total float time for activity C and activity E.

CRITICAL PATH ANALYSIS
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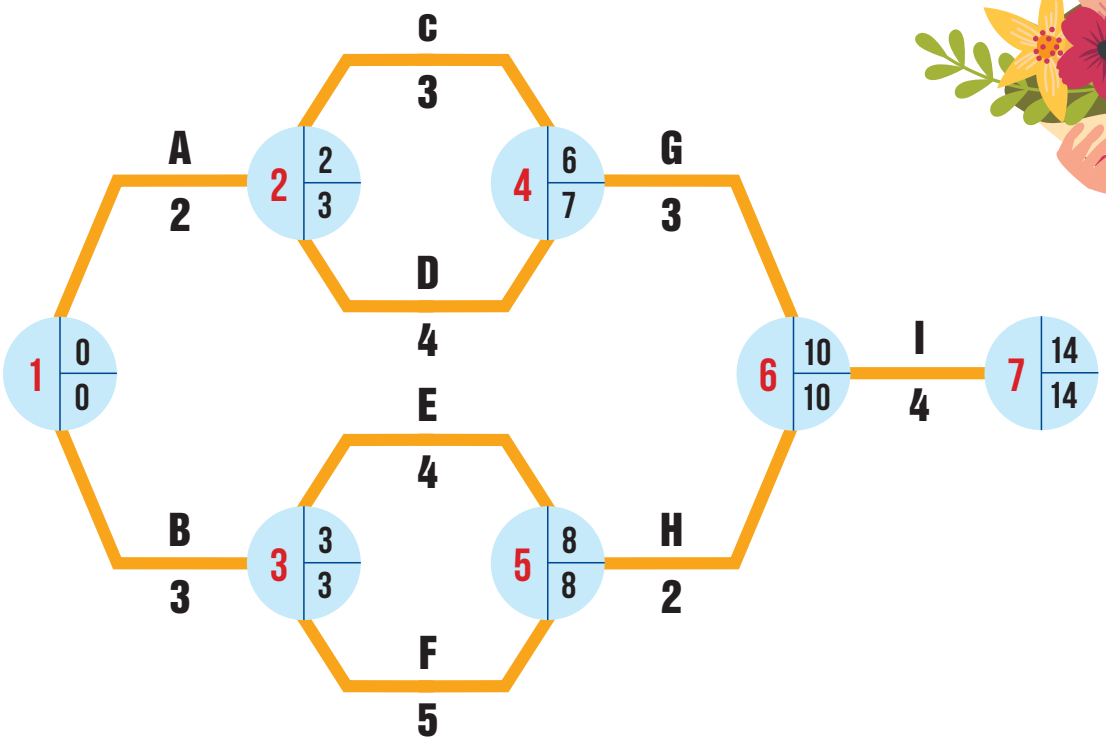
Activity 3 – Floral and Hardy

Olivia Laurel is the co-owner of Floral and Hardy, a chain of florists located in the North East of England. Olivia, and her business partner, Stanley, are looking at running a promotional campaign to increase sales revenue. Olivia has constructed a network diagram (see below) to help plan the stages in the promotional campaign. All activities are in weeks.



Question 1

After discussions with Stanley, Olivia now believes that some of the estimated times are incorrect. She estimates that:

- Activity C will take 3 weeks longer than originally estimated
- Activity F will be completed 2 weeks quicker than originally estimated
- Activity I will take 2 weeks longer than originally estimated

Based on the information, calculate the new duration of the critical path.

CRITICAL PATH ANALYSIS
TEACHER ANSWERS

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Activity 1 – Lebaneser Scrooge

Question 1

Total float time of activity D = 9 weeks

17 – 4 – 4 = 9 weeks

Question 2

Duration of the critical path increases by 1 week

Activity C would increase to 5 weeks

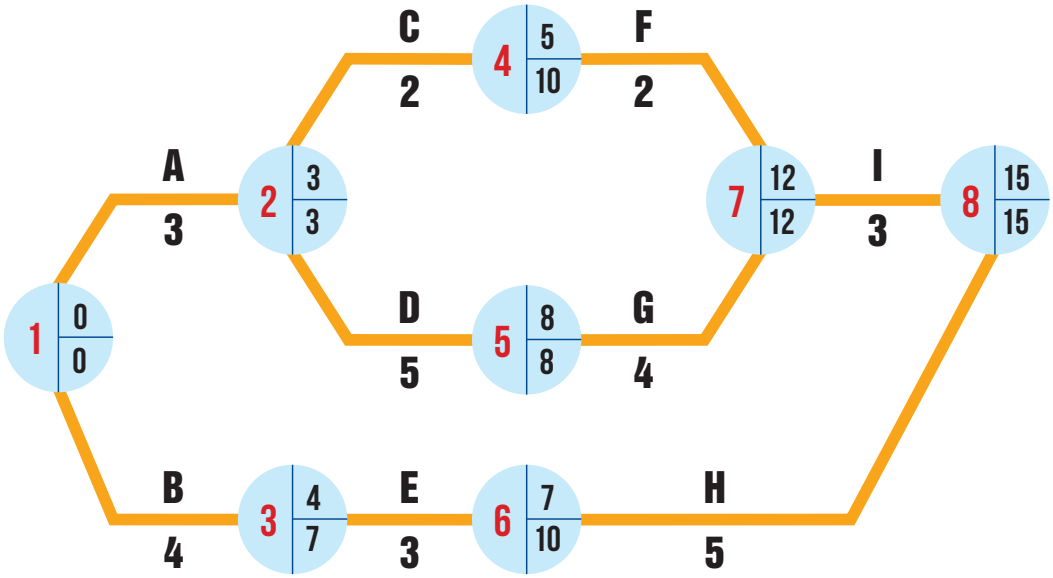
EST of activity E = 9 weeks (4 + 5)

EST of activity G = 18 weeks (9 + 9)

Duration = 24 weeks (18 + 6)

24 – 23 = 1 week

Activity 2 – Dwayne Pipe Ltd



Question 2

Critical path = A, D, G and I

Question 3

Total float time of activity C = 5 weeks

(10 – 2 – 3 = 5 weeks)

Total float time for activity E = 3 weeks

(10 – 3 – 4 = 3 weeks)

CRITICAL PATH ANALYSIS
TEACHER ANSWERS

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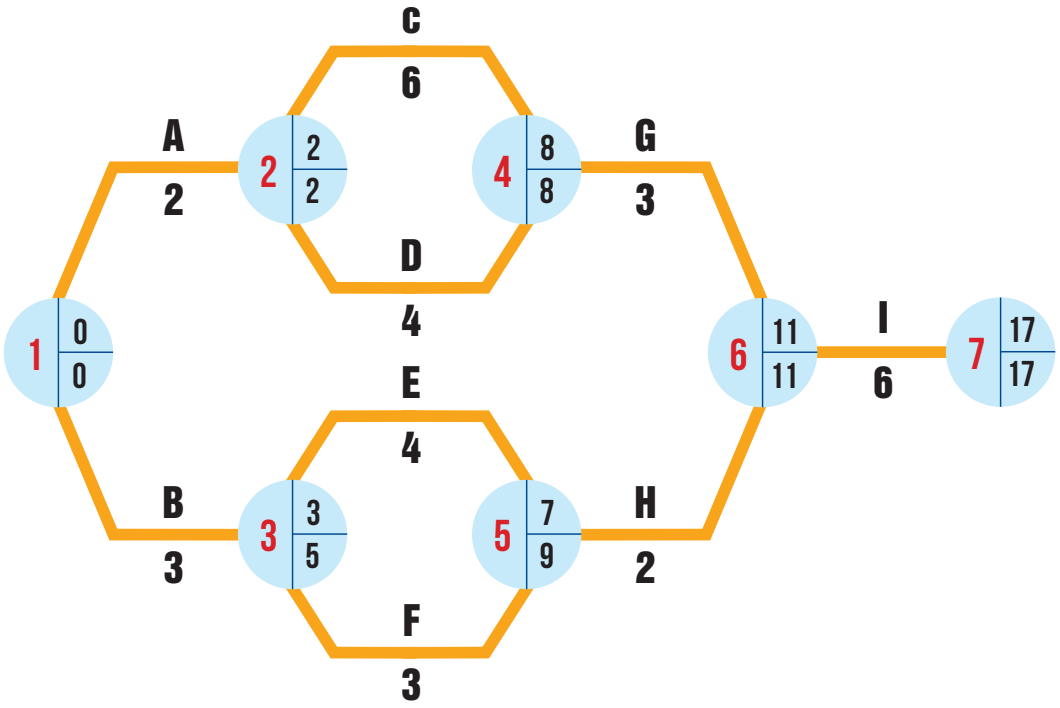
Activity 3 – Floral and Hardy



New duration of the critical path = 17 weeks