Critical Path Analysis

Activity		duration
Shower		3
Dry hair		8
Fetch car		7
Iron clothes		12
Dress and make-up		10
Drive to interview		20

Precedence table

	Activity	Immediately preceding activities	duration
A	Shower	-	3
B	Dry hair	A	8
C	Fetch car	-	7
D	Iron clothes	-	12
E	Dress and make-up	B,D	10
F	Drive to interview	C,E	20

Activity on Arc Network

A(3)

2

B(8)

D(12)

1

3

5

E(10)

F(20)

C(7)

4
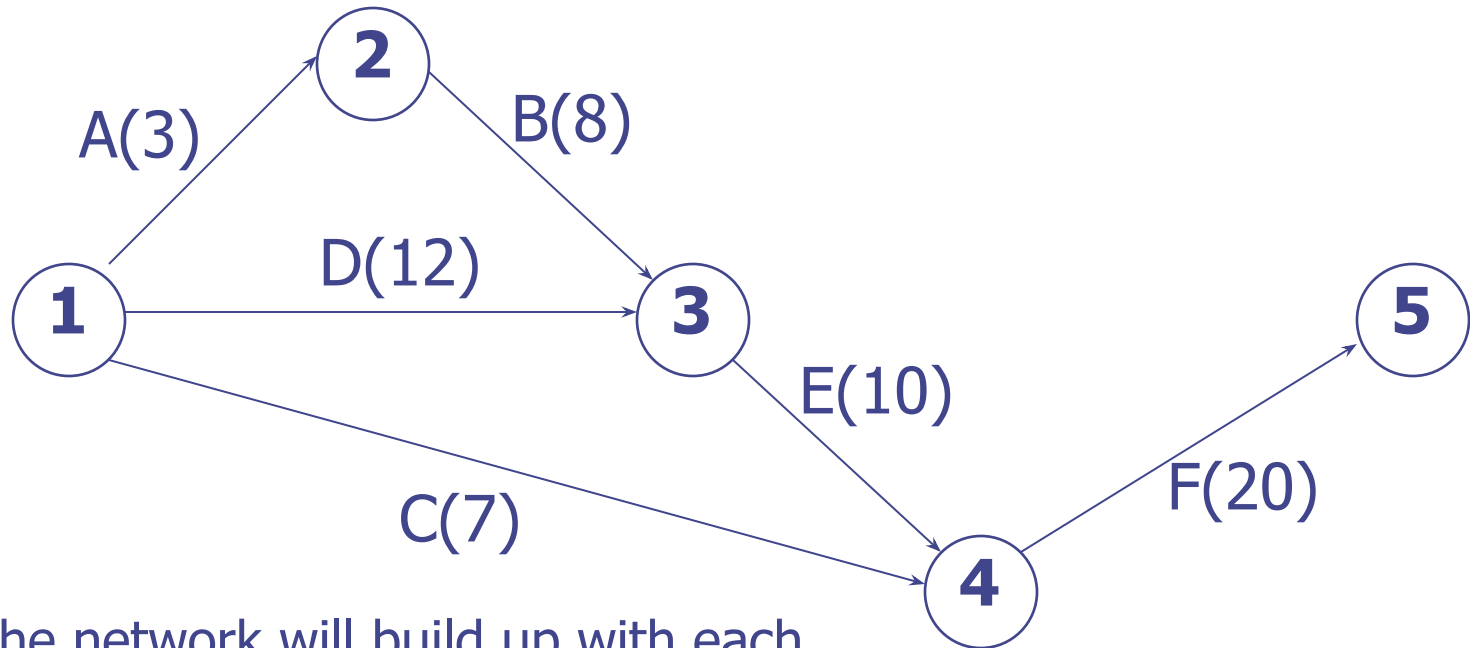
The network will build up with each mouse click, in the order you would construct it on paper.

Event Times

Each event node needs two boxes, to mark in the event times.

2

A(3)

B(8)

D(12)

1

3

E(10)

5

C(7)

F(20)

4

Earliest event time **EET**

Latest event time **LET**
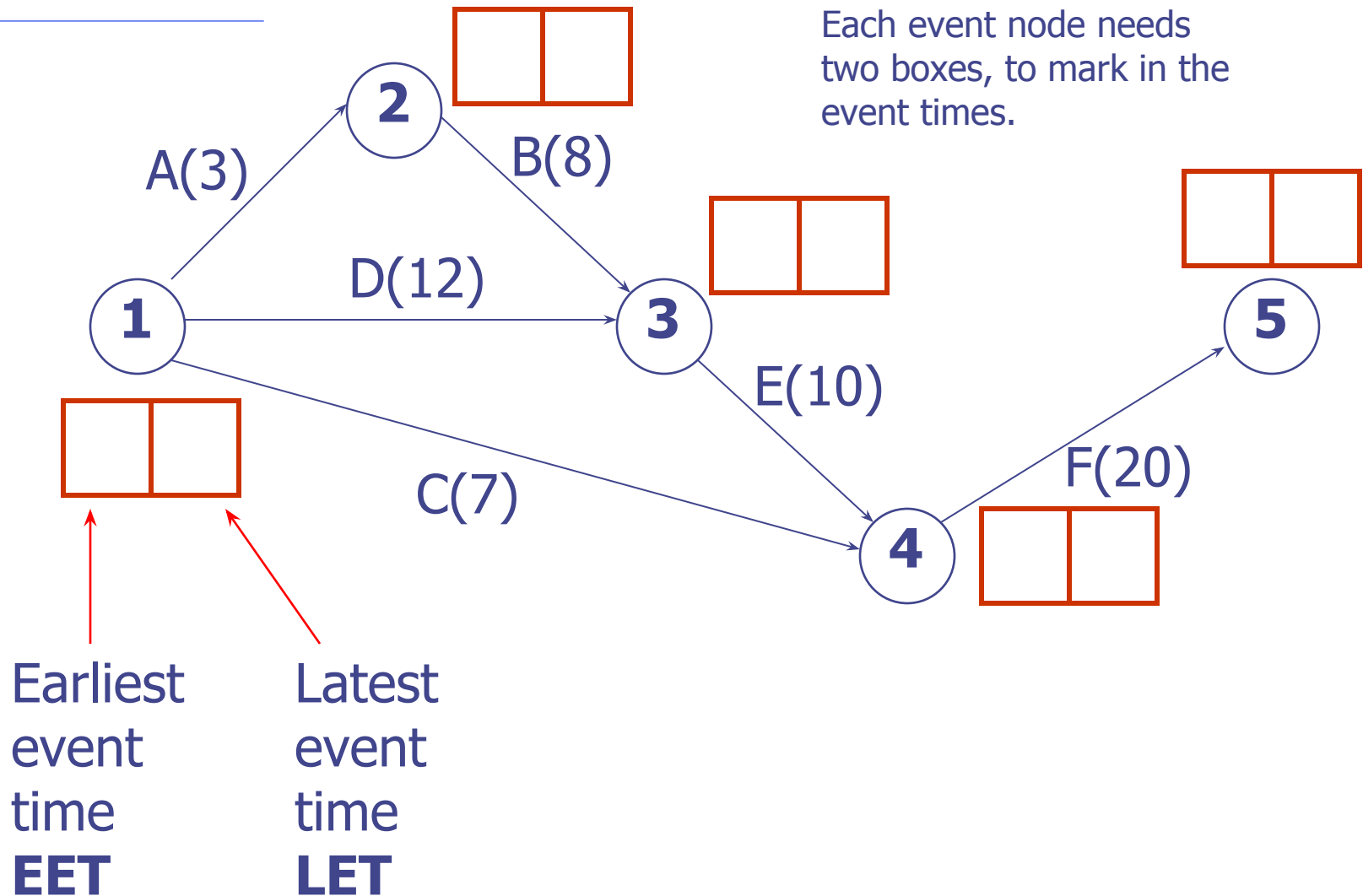
Earliest Event Times

The EET for an event occurs when all activities leading into that event are complete.

2

3 | |

A(3)

B(8)

12 | |

42 | |

D(12)

1

3

5

E(10)

0 | |

F(20)

C(7)

4   **22** | |
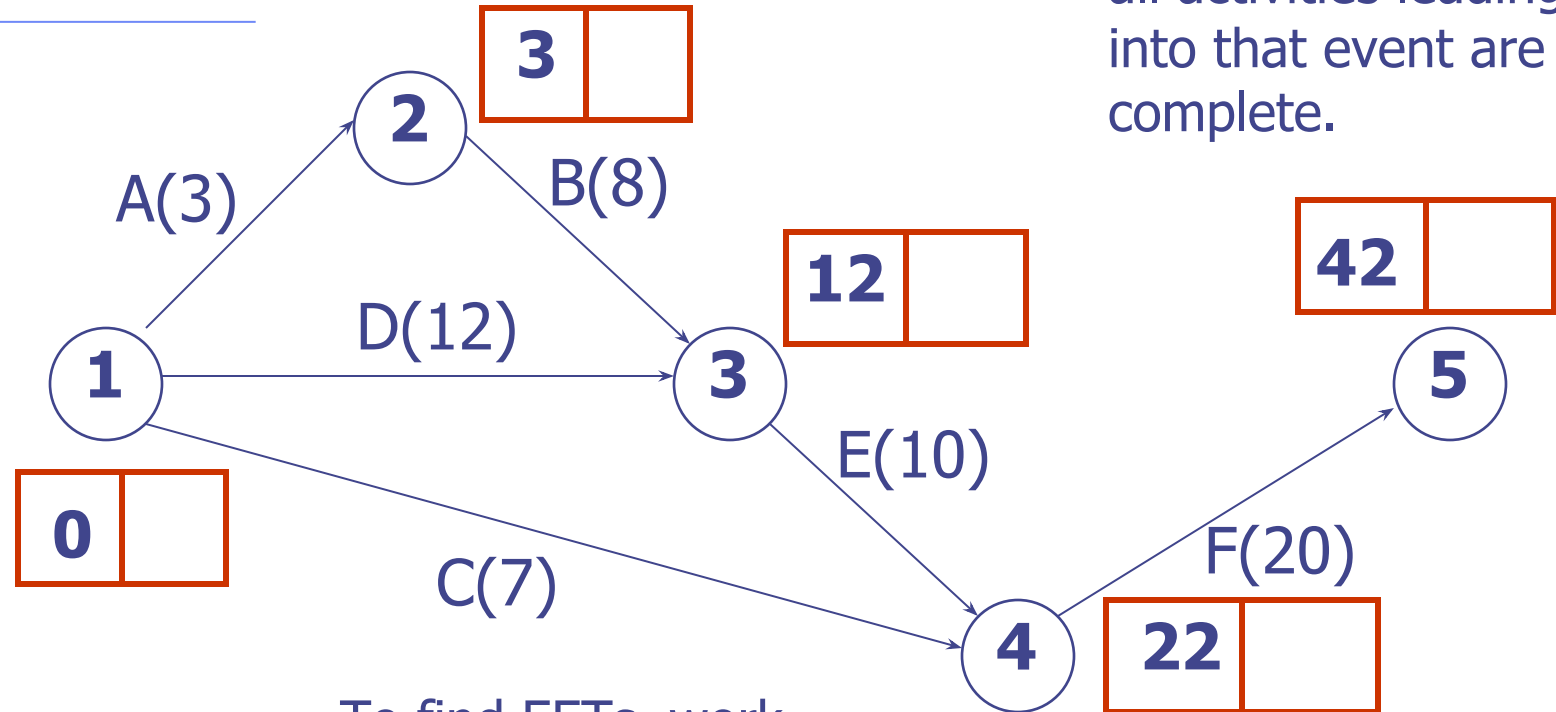
To find EETs, work forwards through the network from the start node to the finish node.

Latest Event Times

The LET for an event is the latest it can occur without delaying subsequent events.

3 | 4

2

A(3)

B(8)

12 | 12

42 | 42

1

D(12)

3

5

0 | 0
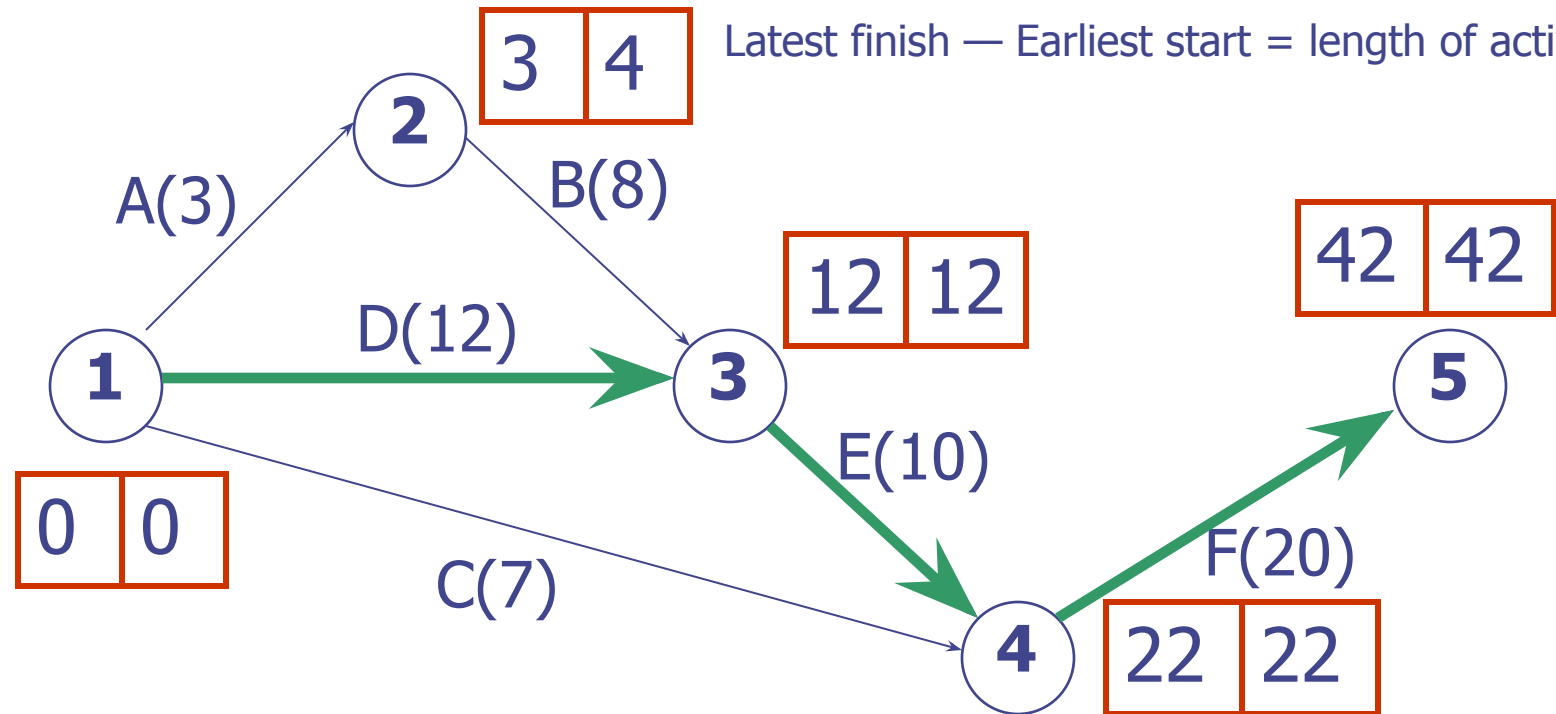
E(10)

F(20)

C(7)

4

22 | 22
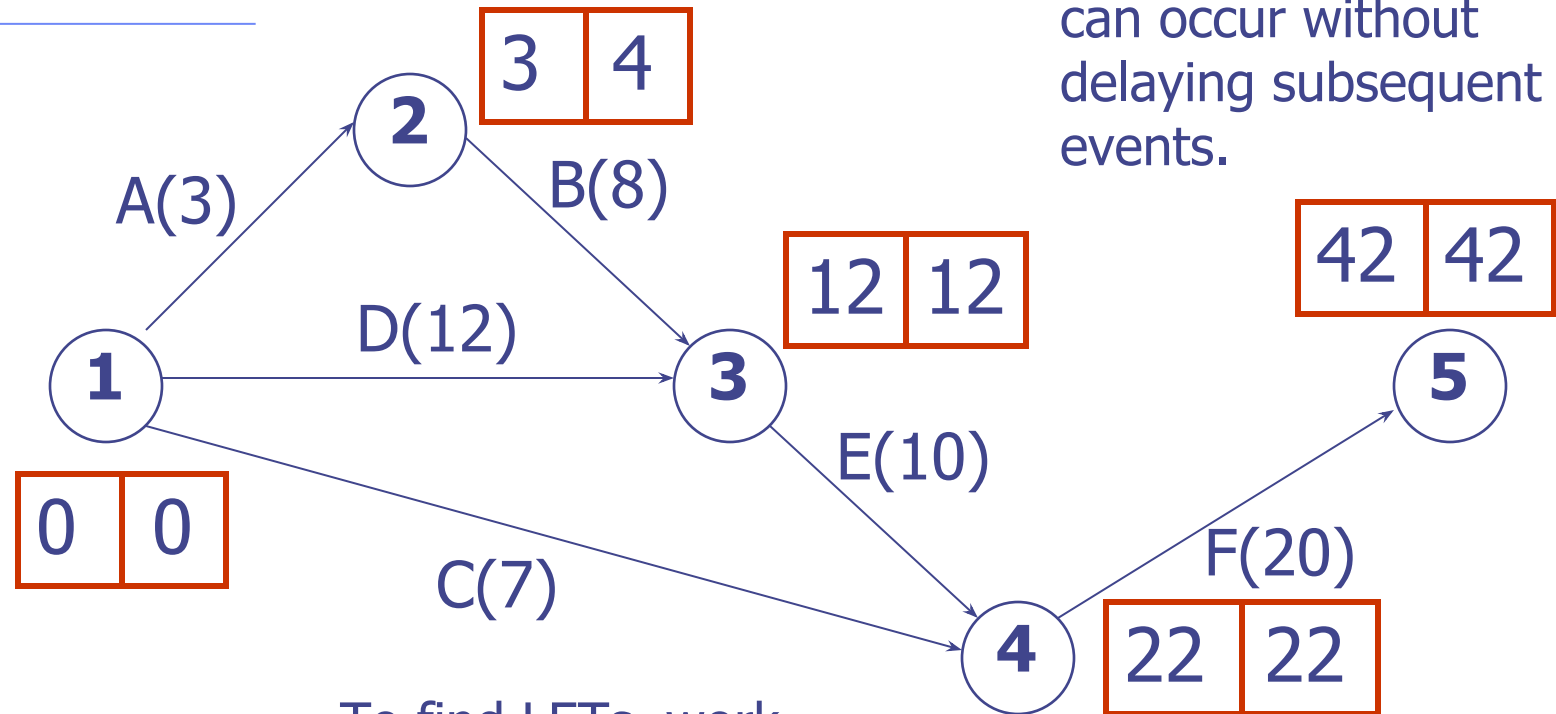
To find LETs, work backwards through the network from the finish node to the start node.

Critical Activities

Critical activities are activities that cannot run late. For critical activities:

Latest finish — Earliest start = length of activity

A(3)

B(8)

D(12)

E(10)

C(7)

F(20)

| 3 | 4 |

| 12 | 12 |

| 42 | 42 |

| 0 | 0 |

| 22 | 22 |

The **green** arrows mark the critical activities, which form the **critical path**. The critical path(s) must form a continuous route from the start node to the finish node.

Float

- **Total Float**
  latest finish – earliest start – length of activity

- **Independent Float**
  earliest finish – latest start – length of activity

- **Interfering Float**
  Total float – Independent float

It is useful to represent float in a table.

	Total	Independent	Interfering
A			
B			
C			

Float (answers)

	Total	Independent	Interfering
A	1	0	1
B	1	0	1
C	15	15	0

Hint:
Total is maximum possible float so take "outside" no.s
Independent is minimum possible float so take "inside" no.s