



[Course](#) > [Unit 9: Integer Optimization](#) > [Sports Scheduling: An Introduction to Integer Optimization](#) > Quick Question

Quick Question

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Quick Question

2/2 points (graded)

Suppose that you are trying to schedule 3 games between 6 teams (A, B, C, D, E, and F) that will occur simultaneously. Which of the following are feasible schedules? Select all that apply.

☒ A plays B, C plays D, and E plays F ✓

☐ A plays C, B plays D, and C plays F

☒ A plays F, B plays E, and C plays D ✓

☐ A plays B, B plays C, and C plays D

☒ A plays D, B plays E, and C plays F ✓



Explanation

Each of the teams has to play exactly one of the other teams for the games to occur simultaneously. In the second option, C is playing twice, which is impossible. In the fourth option, B and C are both playing twice.

How many different feasible schedules are there?

☐ 5

☐ 10☒ 15 ✓☐ 20☐ 25

Explanation

There are 15 different feasible schedules. We can count them by observing that A can play any of the 5 teams. Once this is fixed, we have 4 teams left. There are 3 ways to make two pairs out of 4 teams. So in total, there are $5 \times 3 = 15$ different schedules. Here is a list of all of them:

A plays B, C plays D, E plays F
A plays B, C plays E, D plays F
A plays B, C plays F, D plays E
A plays C, B plays D, E plays F
A plays C, B plays E, D plays F
A plays C, B plays F, D plays E
A plays D, B plays C, E plays F
A plays D, B plays E, C plays F
A plays D, B plays F, C plays E
A plays E, B plays C, D plays F
A plays E, B plays D, C plays F
A plays E, B plays F, C plays D
A plays F, B plays C, D plays E
A plays F, B plays D, C plays E
A plays F, B plays E, C plays D

You have used 1 of 2 attempts

i Answers are displayed within the problem



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