

## Conditions

Of all the DVDs in a large shipment, 20% have a defective disc, 16% have a defective case, and 10% have both defects. If you purchase one of the DVDs in this shipment, find the probability that it has the following.

(a) a defective disc or a defective case

(b) a good disc or a good case

(c) a good disc and a good case

## Solution

a.

We know, that for dependent events

$$P(A \cup B) = P(A) + P(B) - P(A \cap B)$$

$$P = 0.2 + 0.16 - 0.10 = 0.26 = 26\%$$

b.

It is the opposite event to "have both defects", that's why

$$P = 1 - 0.1 = 0.9 = 90\%$$

c.

It is the opposite event to "a defective disc or a defective case", that's why

$$P = 1 - 0.26 = 0.74 = 74\%$$