Sets

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10/9/18
1332
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⑥ $C=\{1\}$ $n(C)=1$

$P(C)=\{\text{all subsets of } C\}$

$=\{\emptyset, \{1\}\}$

$n(P(C))=2$

$B=\{1,2\}$ $n(B)=2$

$P(B)=\{\emptyset, \{1\}, \{2\}, \{1,2\}\}$

$n(P(B))=4$

{2} not a proper subset

$A=\{1,2,3\}$ $n(A)=3$

$P(A)=\{\emptyset, \{1,2,3\}, \{1\}, \{2\}, \{3\}, \{1,2\}, \{1,3\}, \{2,3\}\}$

{1,2,3} not proper

$D=\{1,2,3,4\}$ $n(D)=4$

$n(P(D))=16=2^4$

$E=\{1,2,3,4,5\}$ $n(E)=5$

$n(P(D))=2^5=32$

A general rule: If F is a set then,

$n(\mathcal{P}(F)) = 2^{n(F)}$

32. $F = \{$players on football team$\}$
$D = \{$players who play defense$\}$ $D \subseteq F$ ✓
$O = \{$players who play offense$\}$ $O \subseteq F$ ✓

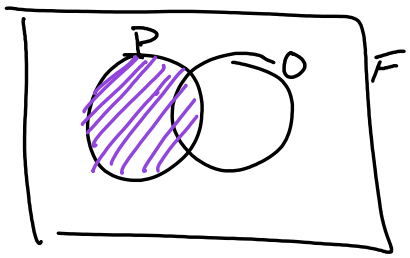
We know $D \subseteq F$ because all the defense players are on the football team.

We can't be sure $D \subset F$ because some football teams might have every player on the team play on defense.

$D \cap F$ = overlap of defense players & football team is the same as the set of defense players.

$D \cap F = D$

$D \cap F$ = shaded area = D



$D \cap O = \{$ players who