



Table number	School



Year 10 Maths Feast 2015

Entrée: Comprehension Round on Set Theory (30 marks)

1. Given $A = \{1, 2, 4, 8, 16\}$, $B = \{2, 4, 6, 8, 10, 12\}$ and $\mathcal{E} = \{1, 2, 3, 4, \dots, 20\}$

Write down:

$$n(A) = \boxed{}$$

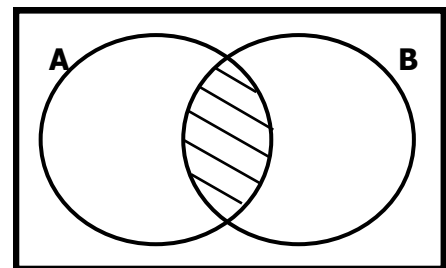
$$A \cap B = \boxed{\phantom{\{ \quad \quad \quad \}}}$$

$$n(A \cup B^c) = \boxed{}$$

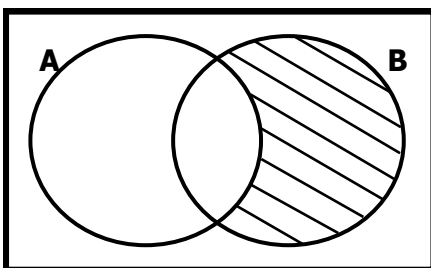
$$A \cup B = \boxed{\phantom{\{ \quad \quad \quad \}}}$$

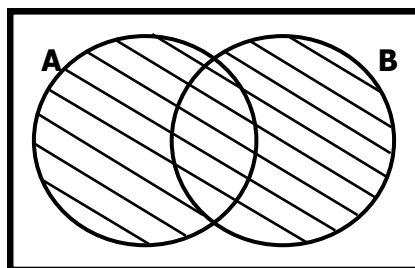
$$A^c \cap B = \boxed{\phantom{\{ \quad \quad \quad \}}}$$

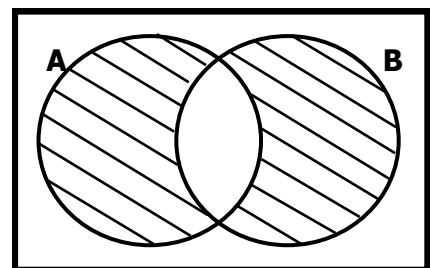
2. The shaded region on the Venn diagram shows $A \cap B$.

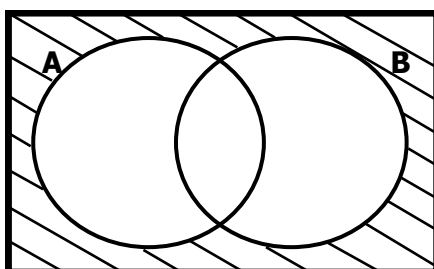


For each diagram below, write down the description for each shaded area.









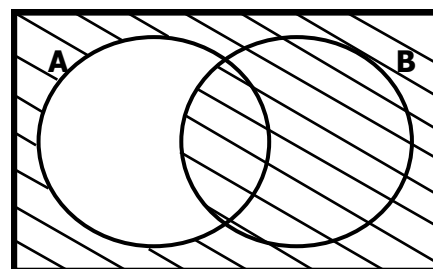
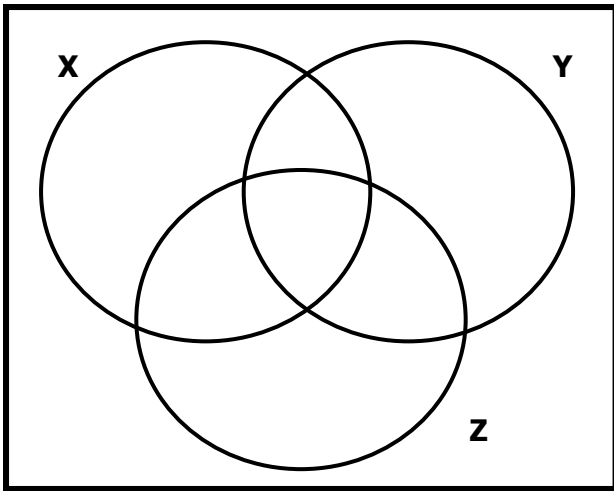


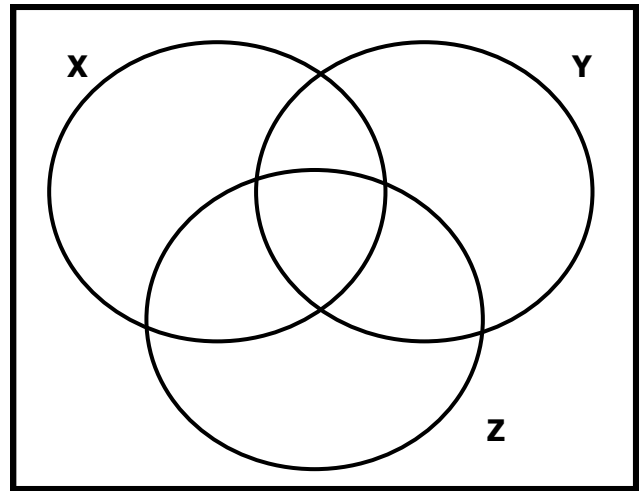


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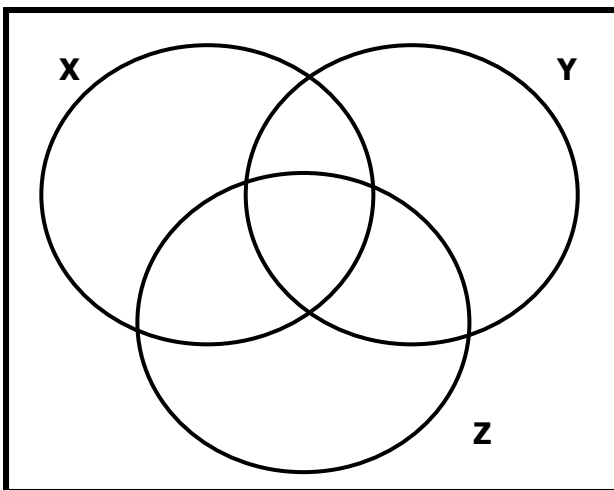
3. Shade each diagram to show the region described by the statement underneath the diagram:



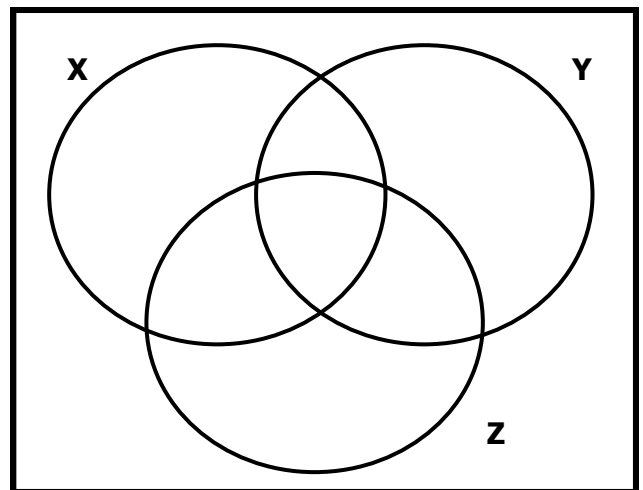
$$X \cap Y$$



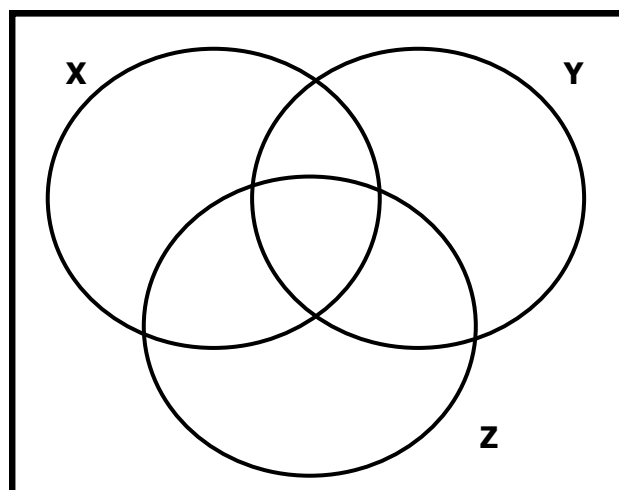
$$X \cup (Y \cap Z)$$



$$X^c \cap (Y \cup Z)$$



$$X \cup Y \cup Z^c$$



$$(X \cap Y^c) \cup (Y \cap X^c) \cup (Z^c \cap X \cap Y)$$