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Parcial 1

$$1(B \oplus D) \cap (A \cup C)$$

$$(B \oplus D) = \{2, 3, 5, 7, 9, 10, 11, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 25, 26, 27\}$$

$$(A \cup C) = \{2, 4, 5, 6, 8, 9, 12, 15, 18, 21, 24, 27, 30, 33, 48\}$$

$$(B \oplus D) \cap (A \cup C) = \{2, 5, 9, 15, 18, 21, 27\}$$

$$((A - D) \cap C) \oplus (B \cup C)$$

$$A - D = \{4, 6, 8, 12, 24, 48\}$$

$$(A - D) \cap C = \{12, 24\}$$

$$((A - D) \cap C) \oplus (B \cup C) = \{4, 5, 7, 9, 10, 11, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 25, 26, 27, 30, 33, 48\}$$

$$((A - C) \cup (B \cap D)) - (A \cup B \cup C)$$

$$A - C = \{2, 4, 6, 8, 12, 48\}$$

$$B \cap D = \{3, 5, 7, 11, 13, 17, 19, 23, 25\}$$

$$(A - C) \cup (B \cap D) = \{2, 3, 4, 5, 6, 7, 8, 11, 12, 13, 17, 19, 23, 48\}$$

$$(A \cup B \cup C) = \{2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 30, 33, 48\}$$

$$((A - C) \cup (B \cap D)) - (A \cup B \cup C) = \{\emptyset\}$$

$$A = \{2, 4, 6, 8, 12, 24, 48\}$$

$$B = \{3, \text{ hasta } 27\}$$

$$C = \{5, 9, 12, 15, 18, 21, 24, 27, 30, 33\}$$

$$D = \{2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43\}$$

$$E = \{2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43\}$$

$$F = \{2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43\}$$

$$G = \{2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43\}$$

$$H = \{2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43\}$$

$$I = \{2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43\}$$

$$J = \{2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43\}$$

$$K = \{2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43\}$$

$$L = \{2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43\}$$

$$M = \{2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43\}$$

$$N = \{2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43\}$$

$$O = \{2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43\}$$

$$P = \{2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43\}$$

$$Q = \{2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43\}$$

$$R = \{2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43\}$$

$$S = \{2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43\}$$

$$T = \{2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43\}$$

$$U = \{2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43\}$$

$$V = \{2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43\}$$

$$W = \{2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43\}$$

$$X = \{2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43\}$$

$$Y = \{2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43\}$$

$$^2 a) C(30,8) = \frac{30!}{22! 8!} =$$

30 Películas

8 Películas para digitalizar

$$= \frac{265252859812191058636308480000000}{1124000722777607680000 \times 40320} = 45,319,709,343,993,141,657,600,000$$

= 5'852.925 formas para seleccionar 8 películas

$$b) C(12,3) = \frac{12!}{9! 3!} = \frac{479001600}{362880 \times 6} = 220$$

$$C(18,5) = \frac{18!}{13! 5!} = \frac{6402373705728000}{6227020800 \times 120} = 8568$$

1.884.960 Formas de seleccionar las películas

$$c) 30 \times 8 = 240 \text{ Formas}$$