

Task:

A mini-van sells for \$32 000 plus gst and PST. A dealership predicts that in 3 years ,the cost of the new model will increase by 15%. How much should you invest today at 7.25% per annum,compounded semi-annually, to buy the new model in 3 years?

Solution:

We calculate what will be the price of the new model in 3 years:

15% of \$32 000 is $32\,000 \cdot 0.15 = 4\,800$;

$\$32\,000 + \$4\,800 = \$36\,800$

So, price will be \$36 800.

The half-year increment is:

$7.25\% / 2 = 3.626\%$

By the formula for compound interest count three annual increase:

$(1 + 0.03626)^6 \approx 1.2383$

So invest should be:

$\frac{36\,800}{1.2383} \approx 29\,719$

Answer: \$29 719

3. Construct a Venn diagram illustrating the following sets.

$$3) U = \{2, 4, 6, 8, 10, 12\}$$

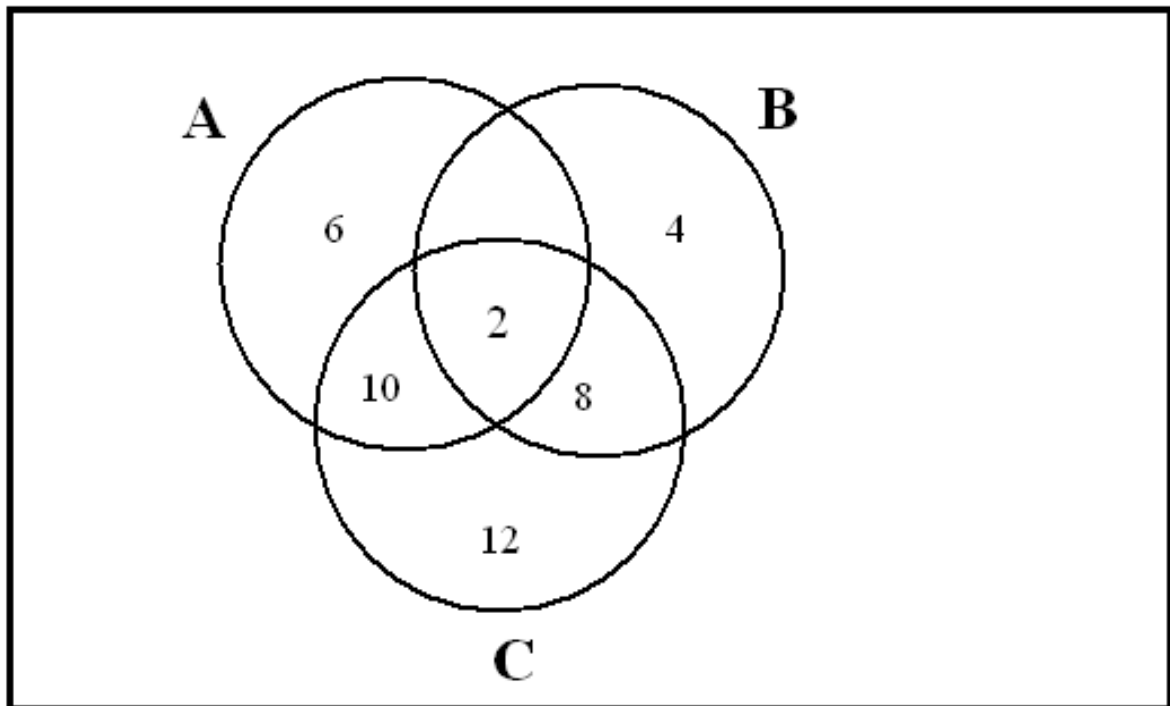
$$A = \{2, 6, 10\}$$

$$B = \{2, 4, 8\}$$

$$C = \{2, 8, 10, 12\}$$

Solution:

$$U = \{2, 4, 6, 8, 10, 12\}$$



4. Find $n(A)$ for the set $A = \{3, 5, 7, 9, 11, 13\}$

Solution:

$$n(A) = \text{number of items in set } A = 5$$

Answer: 5

5. Find $n(A)$ for the set $A = \{x \mid x \text{ is a second in a minute}\}$

Solution:

$$n(A) = \text{number of items in set } A,$$

$$\text{so } n(A) = 59 - 0 + 1 = 60$$

Answer: 60