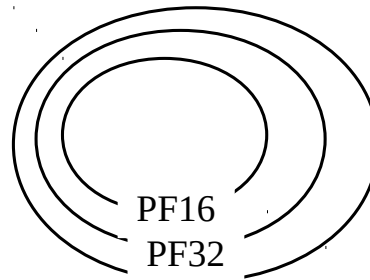


Solve in this handout:

1. Finish the Venn diagram for prime factors of the following numbers:
16, 32, 64, 128, 256.



2. Using prime factorization find LCM and GCD of ...

a). ... 24 and 60

b). ... 48 and 36

c). ... 176 and 528

$$24 = \underline{\hspace{2cm}}$$

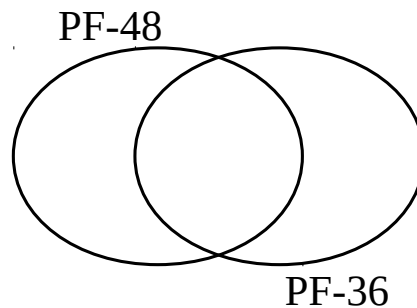
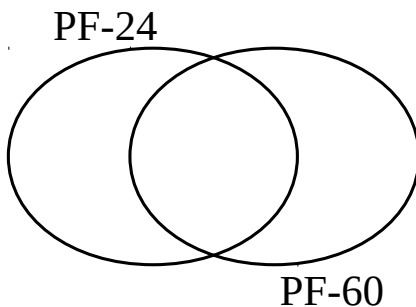
$$36 = \underline{\hspace{2cm}}$$

$$176 = \underline{\hspace{2cm}}$$

$$60 = \underline{\hspace{2cm}}$$

$$48 = \underline{\hspace{2cm}}$$

$$258 = \underline{\hspace{2cm}}$$



$$\text{LCM}(24,60) = \underline{\hspace{2cm}}$$

$$\text{LCM}(48,36) = \underline{\hspace{2cm}}$$

$$\text{GCF}(24,60) = \underline{\hspace{2cm}}$$

$$\text{GCF}(48,36) = \underline{\hspace{2cm}}$$

3. Consider the number $\mathbf{W} = 5 \cdot 5 \cdot 2 \cdot 2 \cdot 2 \cdot 7 \cdot 11$.

Without calculations explain whether $\mathbf{W}$ is a multiple of 10.

Is $\mathbf{W}$ a multiple of 100? _____

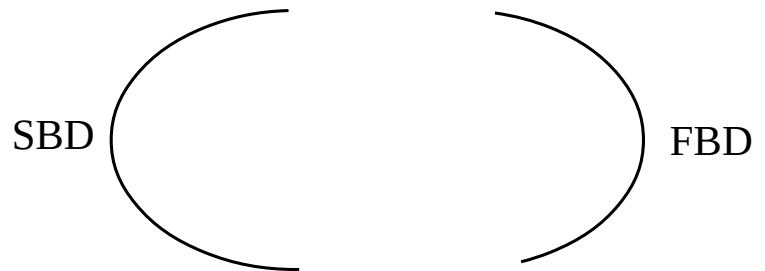
Is it a multiple of 1000? _____

How many zeros does $\mathbf{W}$ have at the end? _____

4. Ages of Amanda, Sara, and Carly are prime numbers. Carly's age is the sum of ages of Sara and Amanda. Amanda is the youngest. How old is Amanda?

5.* Use Venn diagram to solve the word problem:

In a some remote village many years ago villages successfully bred dragons. In a flock of 67 dragons one dragon breeder counted 48 Fire-Breathing Dragons, and another dragon breeder counted 47 Steam-Breathing dragons. Both swore there was no mistake.



Solve in your notebook.

6. In the following puzzle each letter stands for a digit:

$$IT \times AT = 2001$$

Find IT and AT. [Hint: 2001 is divisible by 23.]

7. In some school, every lesson is 45 minutes long, with three minute break between lessons. The first lesson starts at 8:00am. When will be the next lesson that starts on an hour sharp (*i.e.* at some hour and 00 minutes)?

8. Plot points $A(6,5)$ and $B(-3,-1)$ in Cartesian coordinates.

A. Mark point $C(3, y) \in AB$ to find y .

B. Point $D(x, 7) \in AB$. Find x .

9** Do you remember the problem about two players playing with a clock trying to move to 6? How will the problem change if there are 3 players?