

1. Solve equations. Find ALL solutions that will make each statement a true statement:

$$|-x + 100| = 21$$

$$-|1 + x| = -80$$

2. Circle pairs of opposite numbers:

1. a)  $\frac{1}{15}$  and 15    b)  $-\frac{1}{15}$  and  $\frac{1}{15}$     c)  $-\frac{1}{15}$  and  $\frac{15}{1}$     d)  $-\frac{1}{15}$  and  $-\frac{15}{1}$

2. a)  $-\frac{32}{45}$  and  $-\frac{45}{32}$     b)  $-\frac{32}{45}$  and  $\frac{45}{32}$     c)  $-\frac{32}{45}$  and  $\frac{32}{45}$     d) -15 and 15

3. Solve equations:

$$a) \frac{1}{5}x + 11 = 8 - \frac{3}{5}x$$

$$b) \frac{1}{3}y + 2 = 1$$

$$c) 8 - \frac{1}{4\frac{1}{7}z} = 1$$

4. Compute

$$a) \frac{\frac{3}{14} + \frac{1}{2}}{\frac{8}{10} + \frac{1}{2}} =$$

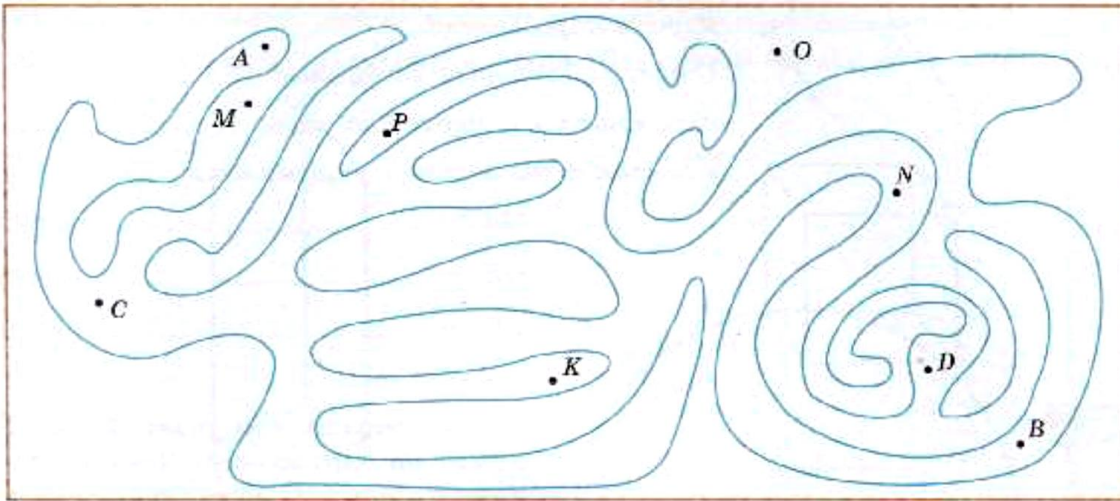
$$b) \frac{9}{7 + 2\frac{1}{7}} =$$

$$c) \frac{\frac{5}{12} - \frac{3}{16}}{\frac{2}{3} + \frac{3}{4}} =$$

5. A farmer has a cow, a goat and a goose. The cow and the goat will eat all the grass on his meadow in 45 days, the cow and the goose will eat all the grass on the same meadow in 60 days, and the goat and the goose will eat all the grass on the meadow in 90 days. How many days will it take them altogether to eat all the grass on the meadow? (we assume that the new grass is not growing.)
6. A cook put 3 tablespoons of salt into a pot with 4 liters of water and 2 tablespoons of salt into a pot with 3 liters of water. Which pot has saltier water?
7. There are singers and dancers in our class. 15 of all singers also dance and 14 of all dancers also sing. Are there more singers or dancers in our class?

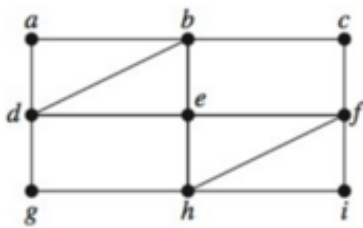
**Geometry.** Enclosed area on a plane is the area limited by a closed curved line (or chain of line segments). Any 2 points within enclosed area can be connected without crossing the curved line (or series of line segments) and any point inside of the limit can't be connected with any point outside of the limit without crossing the curved line (or chain of line segments).

8. Is the curved line on the picture below is closed line?

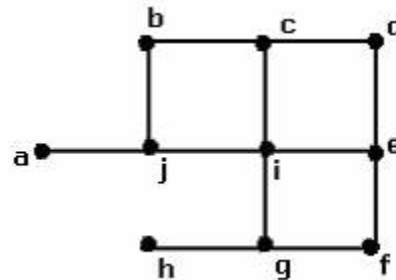


9. Without trying to trace the graph, find out if Euler's path or Euler's Circuit is possible

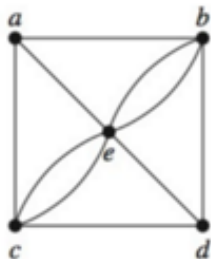
A



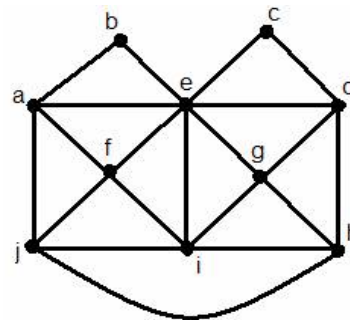
B



C



D



**10. Draw 1 connected graph that has an Euler's circuit and 1 connected graph that has an Euler's path. Show why it is so.**

**11. Make a graph that has only 1 ODD degree vertex. You can use the rest of the page to try different ideas.**