

## Construction

1. In the given figure,  $XZ$  is parallel to  $BC$ .  $AZ = 3\text{cm}$ ,  $ZC = 2\text{cm}$ ,  $BM = 3\text{cm}$  and  $MC = 5\text{cm}$ . Find the length of  $XY$ .

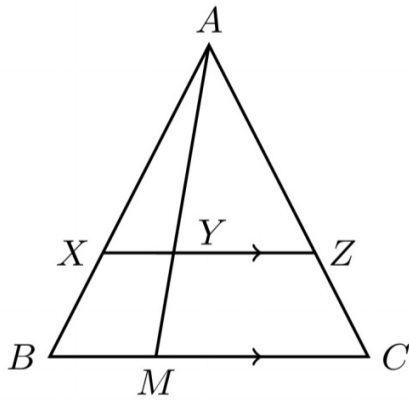


Figure 1: Isosceles Triangle

2. In the given figure,  $DE \parallel BC$ . If  $AD = 2\text{units}$ ,  $DB = AE = 3\text{units}$  and  $EC = x\text{units}$ , then find the value of  $x$  is:

- (a) 2
- (b) 3
- (c) 5
- (d)  $\frac{9}{2}$

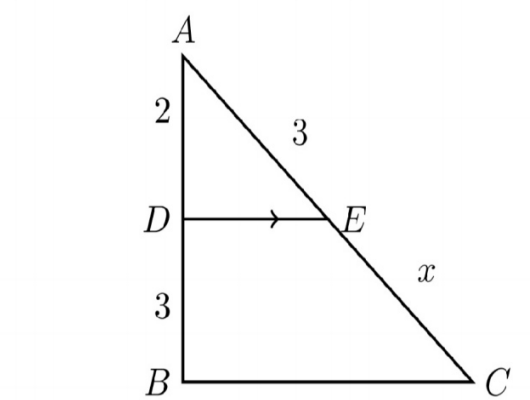


Figure 2: Right Angle Triangle

3. In the given figure,  $\triangle ABC$  and  $\triangle DBC$  are on the same base  $BC$ . If  $AD$  intersects  $BC$  at  $O$ , prove that  $\frac{\text{ar}(\triangle ABC)}{\text{ar}(\triangle DBC)} = \frac{AO}{DO}$ .

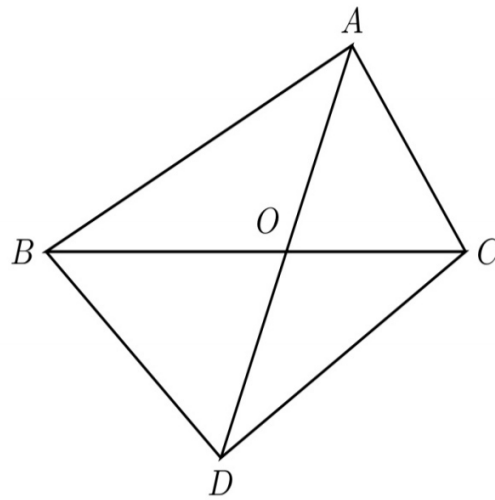


Figure 3: Triangles with same base

## Linear

4. **Assertion (A):** Point  $\mathbf{P}(0,2)$  is the point of intersection of  $y$  - *axis* with the line  $3x + 2y = 4$ .  
**Reason (R):** The distance of point  $\mathbf{P}(0,2)$  from  $x$  - *axis* is 2 units.
5. If the pair of equations  $3x - y + 8 = 0$  and  $6x - ry + 16 = 0$  represent coincident lines, then the value of ' $r$ ' is:
- (a)  $-\frac{1}{2}$
  - (b)  $\frac{1}{2}$
  - (c) -2
  - (d) 2
6. The of linear equations  $2x = 5y + 6$  and  $15y = 6x - 18$  represents two lines which are:
- (a) intersecting
  - (b) parallel
  - (c) coincident
  - (d) either intersecting or parallel
7. Find the equations of the diagonals of the parallelogram **PQRS** whose vertices are  $\mathbf{P}(4,2,-6)$ ,  $\mathbf{Q}(5,-3,1)$ ,  $\mathbf{R}(12,4,5)$  and  $\mathbf{S}(11,9,-2)$ . Use these equations to find the point of intersection of diagonals.
8. A line  $l$  passes through point  $(-1,3,-2)$  and is perpendicular to both the lines  $\frac{x}{1} = \frac{y}{2} = \frac{z}{3}$  and  $\frac{x+2}{-3} = \frac{y-1}{2} = \frac{z+1}{5}$ . Find the ctor equation of the line  $l$ . Hence, obtain its distance from origin.