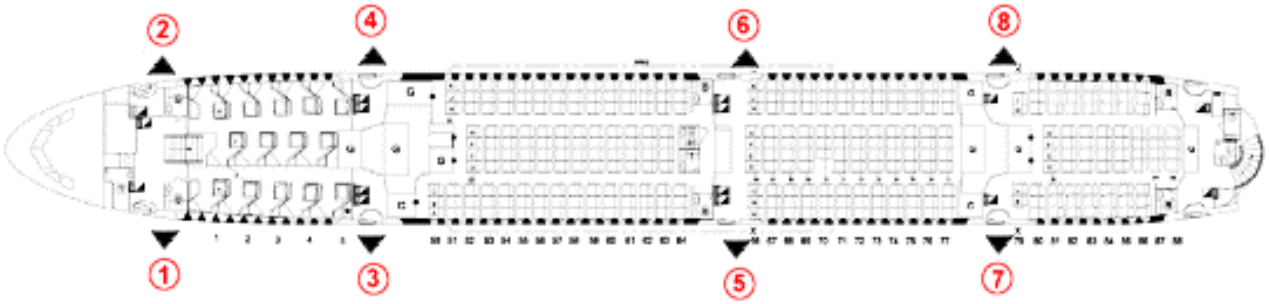
Math 4b. Classwork 10.

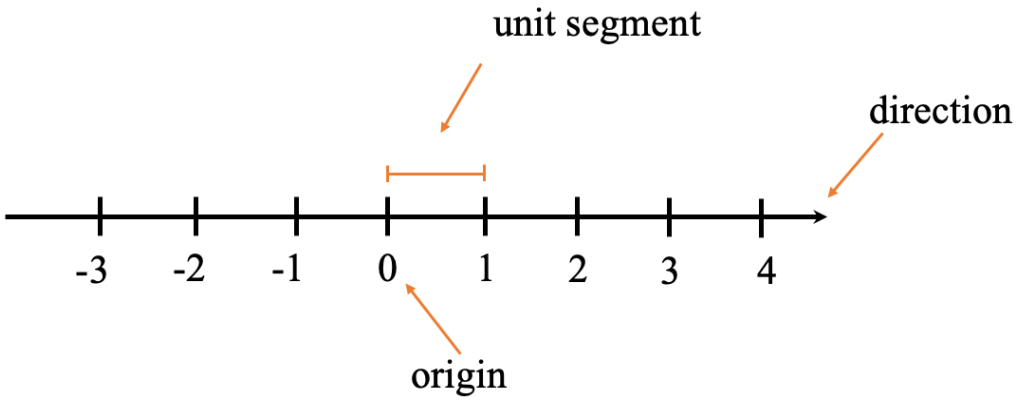
Coordinates.

Coordinates are a set of values that show an exact position. How many values do we need to show the exact position of a point on the number line? How many values do we need to find our place in a theater? In a plane? What we can use as values?



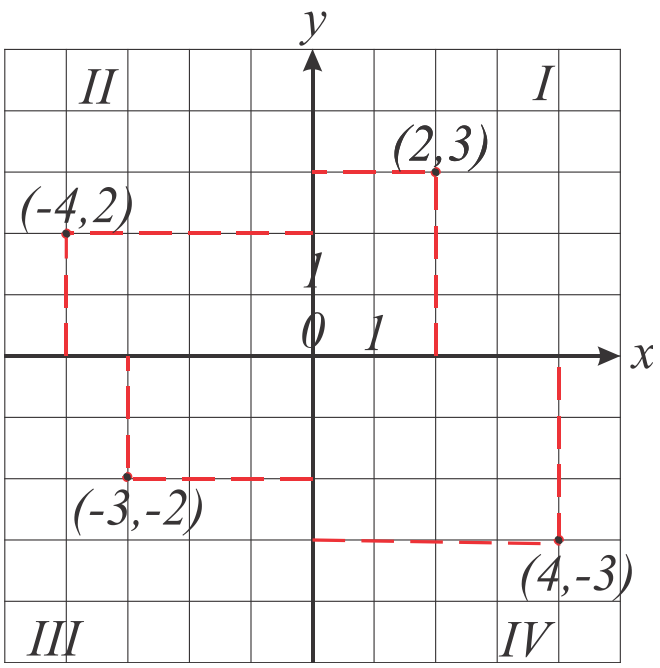
Coordinates on a number line.

On a number line each point represents a number. Each number is linked to a point if an origin (point at 0), a unit segment, and the positive direction are defined.



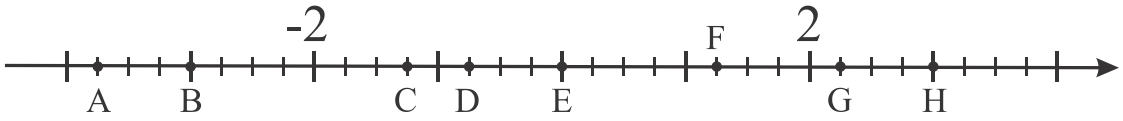
Coordinates on a plane.

On a plane each point corresponds to a unique ordered pair of numbers. To define these pairs, 2 perpendicular number lines are usually used. These two number lines intersect at the point called origin, associated with pair (0,0), have the same unit segment, and are called axis, usually *x* and *y* axis.



HOMEWORK

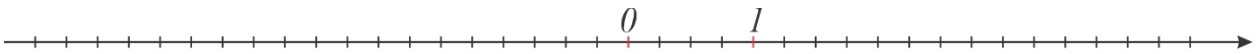
1. Find the coordinates of points A, B, C, D, E, F, G, and H on the number line below:



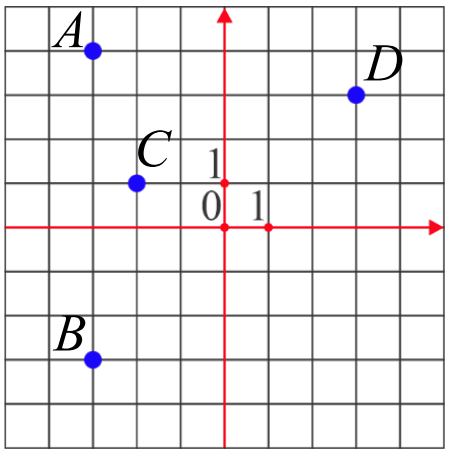
2. Mark the points A(0), B(1), C$\left(-1\frac{1}{2}\right)$, D(5), E(−5), F(−3), G(3)

Is there anything in common between points F and G, D and E?

3. On the line below mark the points with coordinates $2, -2,\ 4, -4,$ $\frac{3}{4}, -\frac{3}{4};\ \ 2\frac{1}{2};\ \ -\frac{5}{2};\ \ \frac{6}{8};\ \ -\frac{10}{4}$



4. Find coordinates of points A, B, C, D.



5. Using the following coordinates mark the points and connect them (**use ruler** to connect points):

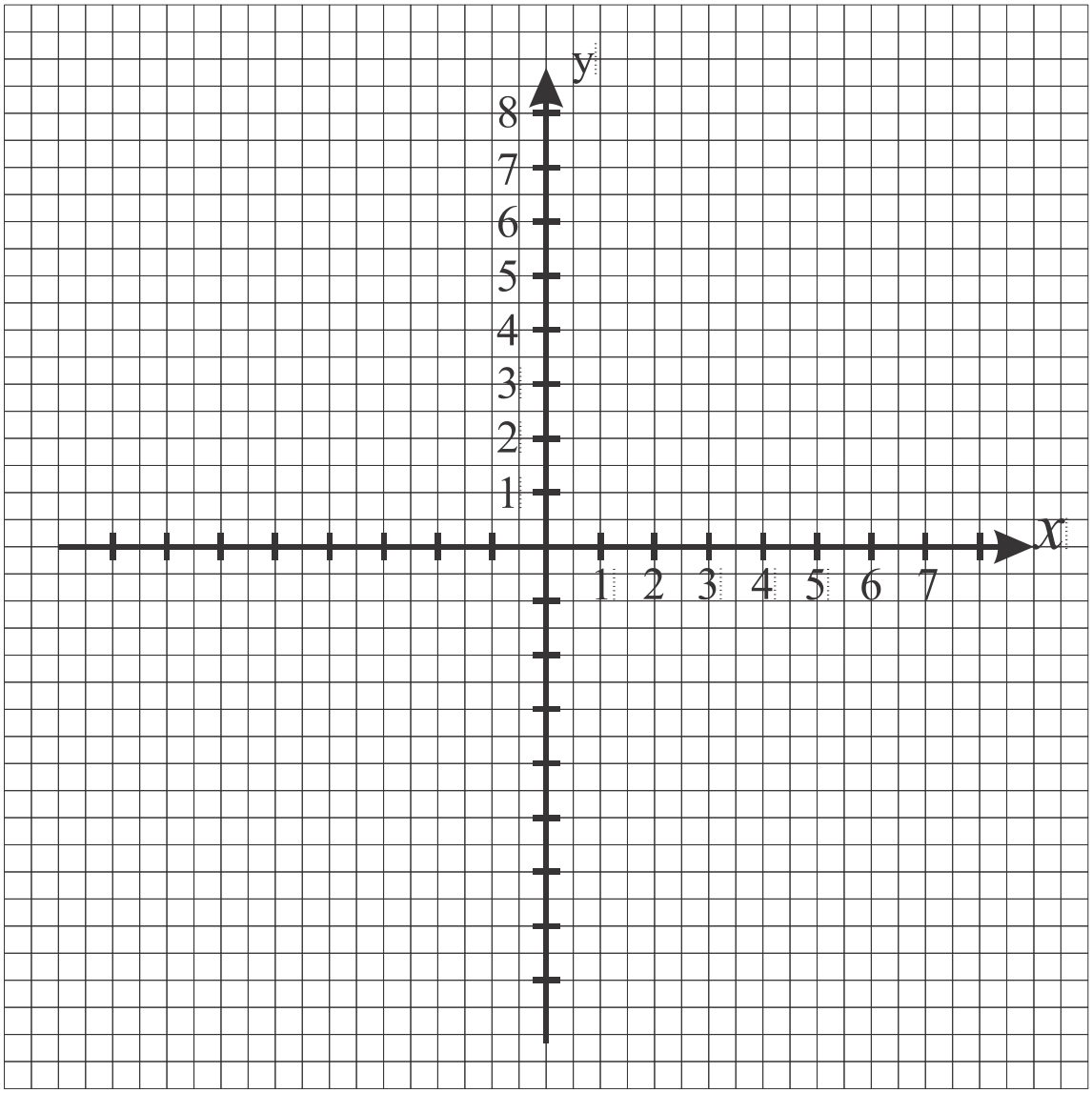
(1; -4)→(0; -4) → (1; -3) → (1; -6) → (3; -6) → (2; -5) → (3; -1) → (2; 2) →

(4; 3) → (5; 4) → (3; 4) → (2; 5) → (1; 5) → (0; 6) → (0; 5) → (-1; 3) →

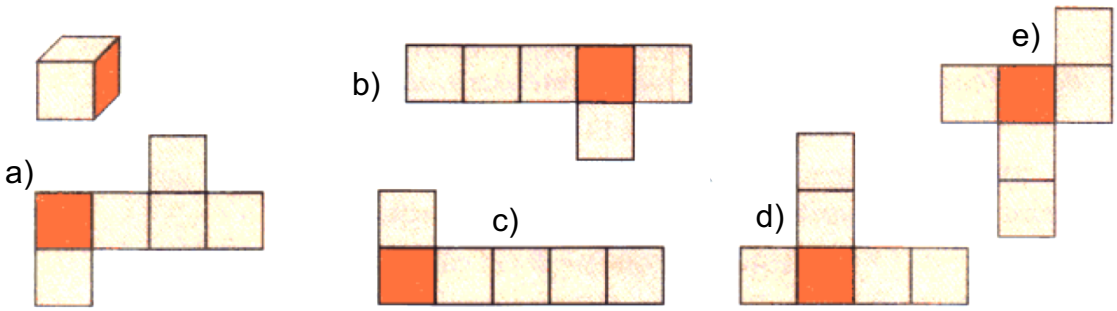
(0; 0) → (-2; -1) → (-3; -4) → (-3; -5) →

(-4; -5) → (-5; -4) → (-6; -3) → (-5; -5) → (-3; -6) → (1; -6)

eye (2; 4).



6. Which of the pictures below are the cube nets?



7. Calculate:

$a)\ \frac{1}{2}\cdot\frac{2}{3}\cdot\frac{3}{4}\cdot\frac{4}{5}$ $b)\ \frac{6}{7}\cdot\frac{7}{8}\cdot\frac{8}{9}\cdot\frac{9}{10}\cdot\frac{10}{11}$ $c)\ \frac{1}{2}\cdot\frac{2}{3}\cdot\frac{3}{4}\cdot\ldots\cdot\frac{23}{24}\cdot\frac{24}{25}$

$d)\ 1\frac{1}{2}\cdot 1\frac{1}{3}\cdot 1\frac{1}{4}\cdot 1\frac{1}{5}$

8. What numbers should be placed instead of '?'