# Formula for the distance between two points and the equation of the circle

1. What does the theorem of Pythagoras says? For what is it used? (Full class)
2. Take a moment to reflect over the following questions and then discuss them in your group.
3. What is the distance between the origin and the following points?
4. (3, 4)
5. (3,-4)
6. (-3, -4)
7. (4, 3)

Draw figures and explain

1. What is the distance between the following points?
2. (1, 4) and (2, 5)
3. (4, 1) and (2, 5)
4. (4, 1) and (5, 2)
5. (4, 1) and (5, 2)

Draw figures and explain

1. Create a formula that can be used to calculate the distance between two points in the plane. Draw a figure and explain how you can be sure the formula is universal. Can you prove it?
2. One group presents their solution for (iii). Is their any other solution? Have all groups the same solution? (Full class)
3. What is a circle? (Full class)
4. Take a moment to reflect over the following questions and then discuss them in your group.’
5. The point P= (x, y) has the distance 3 l.u. to the origin. Set up an equation that describes the situation. Where can P be situated? Draw a figure!
6. The point Q=(x, y) has the distance 4 l.u. to
7. (1, 2)
8. (-1, 2)
9. (2, 1)

Set up equations that describes the different cases. Where can Q be situated?

1. Create an equation that is valid for all points (x, y) with the distance r to the point (x0, y0). Draw a figure!
2. The groups presents their solutions for (v) and (vi). Have all groups the same solution? (Full class)