

### Quiz 3

You must show ALL work! Unsupported answers will receive NO credit.

1. (10 points) Find all points on the  $x$ -axis 5 units from  $(-2, 3)$ .

Answer: A point on the  $x$ -axis has the form  $(x, 0)$ . So using the distance formula we want

$$5 = \sqrt{(x - (-2))^2 + (0 - 3)^2}$$

$$5 = \sqrt{(x + 2)^2 + 9}$$

$$25 = (x + 2)^2 + 9$$

$$25 = x^2 + 4x + 13$$

$$0 = x^2 + 4x - 12$$

$$0 = (x + 6)(x - 2)$$

$$x = -6 \quad x = 2$$

So the two points are  $(2, 0)$  and  $(-6, 0)$ .