

Correction Standards

1st Trial: 2012-2013

Lycee des Arts.

Nour Sadek

1st exercise.

$$\begin{aligned} 1) \quad WE &= \frac{5 \times 4^{13} \times 2^{11} - 16^9}{(3 \times 2^{17})^2} \\ &= \frac{5 \times (2^2)^{13} \times 2^{11} - (2^4)^9}{3^2 \times 2^{34}} \\ &= \frac{(5 \times 2^{37}) - 2^{36}}{3^2 \times 2^{34}} \\ &= \frac{2^{36} (10 - 1)}{9 \times 2^{34}} \end{aligned}$$

$$= 4 \text{ cm}$$

$$\text{So, } WE = 4 \text{ cm} > R = 3 \text{ cm} \checkmark$$

thus, E is an exterior point to (c) since the distance between E and the center W is greater than that of the radius. False

$$2) \quad x = \sqrt{(2 - \sqrt{2})^2}$$

$$2^2 = 4 > (\sqrt{2})^2 = 2$$

So $2 > \sqrt{2}$ (comparing 2+ve nbs is as comparing their square)

$$\text{then } 2 - \sqrt{2} > 0$$

$$\text{then } x = 2 - \sqrt{2}$$

$$\bullet \quad y = \sqrt{(1 - \sqrt{2})^2}$$

$$1^2 = 1 < (\sqrt{2})^2 = 2$$

$$\text{then } 1 < \sqrt{2}$$

$$\text{so, } 1 - \sqrt{2} < 0$$

$$\text{then, } y = \sqrt{2} - 1$$

$$\bullet \quad \text{So } \frac{x}{y} = \frac{2 - \sqrt{2}}{\sqrt{2} - 1} = \frac{(2 - \sqrt{2})(\sqrt{2} + 1)}{(\sqrt{2} - 1)(\sqrt{2} + 1)} = \frac{2\sqrt{2} + 2 - 2 - \sqrt{2}}{1}$$

$$= \sqrt{2} \quad (\text{True}) \checkmark$$

P-1.