6. [14 points] Shown below is a circle of **diameter** 10 cm with center $C$.

Note that the line segment $EB$ is perpendicular to the diameter $AD$.

Fill in the blanks in the following sentences. Give each answer in **exact** form using only numbers and/or trigonometric functions.

a. [2 points] $\theta = \underline{\text{______________}^\circ}$ (degrees).

b. [3 points] The length of the arc $EA$ is $\underline{\text{______________}}$ cm.

c. [3 points] The length of the line segment $BC$ is $\underline{\text{______________}}$ cm.

d. [2 points] The length of the line segment $AB$ is $\underline{\text{______________}}$ cm.

e. [4 points] The length of the line segment $DE$ is $\underline{\text{______________}}$ cm.