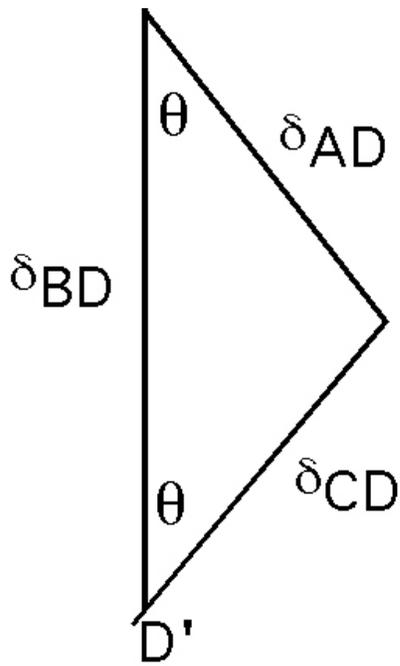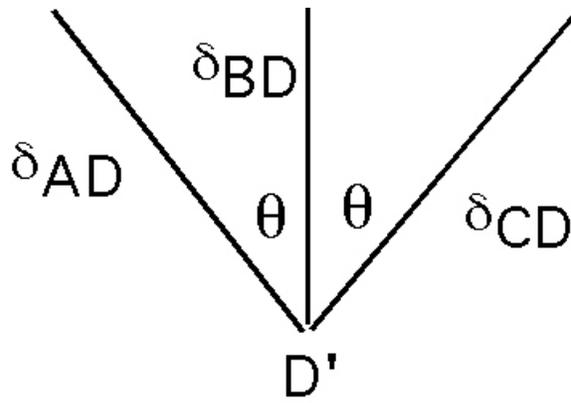M10 CQ1 Which is the most correct displacement diagram for the three bar truss under consideration.

θ

δAD

δBD

θ

δCD

D'

1.

δBD

δAD

θ | θ

δCD

D'

2.

δCD

θ

δBD

δAD

θ

D'
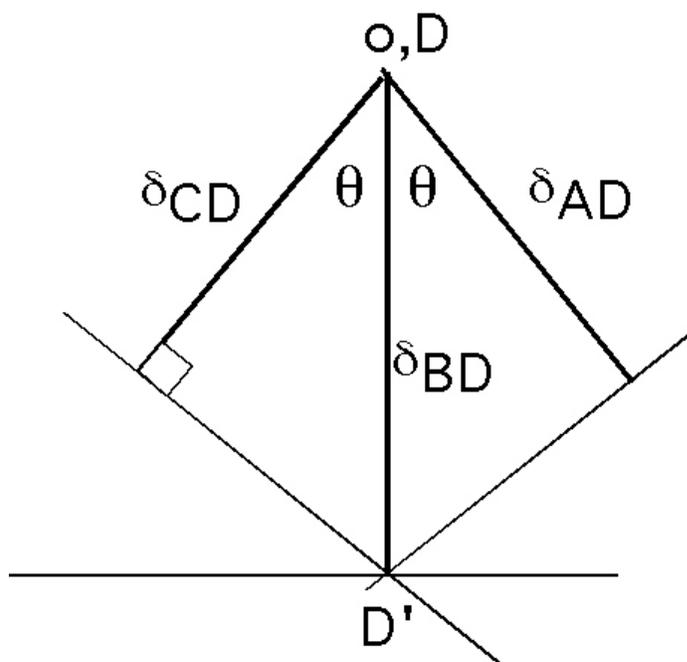
3

o,D

δCD
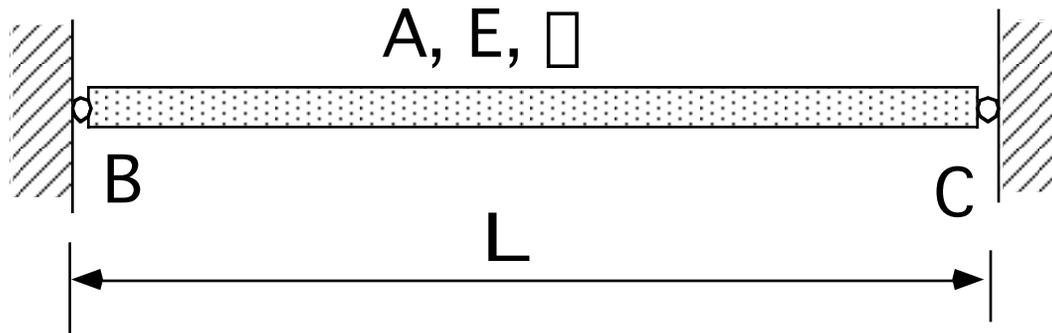
θ | θ

δAD

δBD

D'
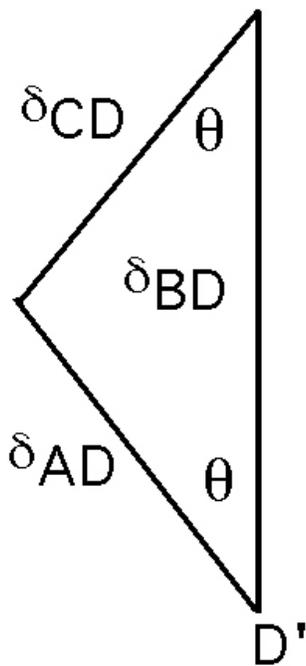
4

5. Some other answer   6. I don't know/don't understand.

M10 Concept Question 2

A pin ended bar is restrained by rigid walls and is exposed to a temperature increase ΔT. We are asked to calculate the force in the bar. The most useful constitutive relationship is likely to be:

A, E, α

B

C

L

1. The bar remains straight and rigid

2. There is no applied force so there will be no bar force

3. The bar extension and bar force are related by: $\delta = \dfrac{FL}{AE}$

4. B_force and B_extension are related by: $\delta = \dfrac{FL}{AE} + \alpha \Delta T L$

5. B_force and B_extension are related by: $\delta = \alpha \Delta T L$

6. Some other answer

7. I don't know/don't understand.
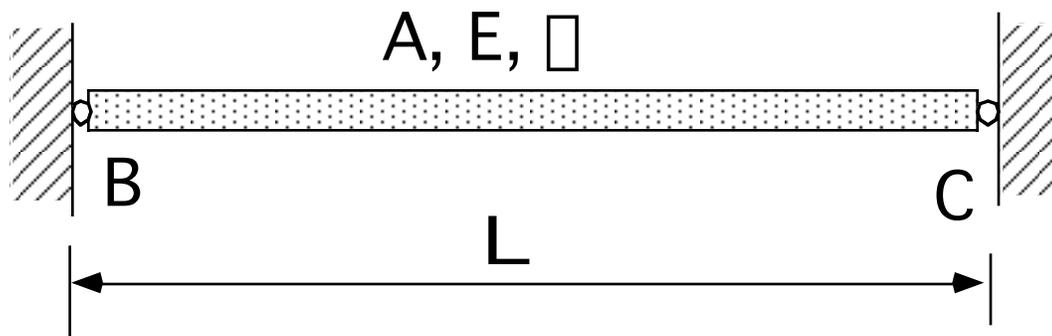
M10 Concept Question 3

A pin ended bar is restrained by rigid walls and is exposed to a temperature increase ΔT. We are asked to calculate the force in the bar. The most useful compatibility condition is likely to be:

A, E, α

B

C

L

1. The bar remains straight and rigid

2. There is no applied force so there will be no bar force

3. The deflections will be symmetric

4. The bar will remain horizontal

5. There will be no displacement of the ends of the bar

6. Some other answer

7. I don't know/don't understand.