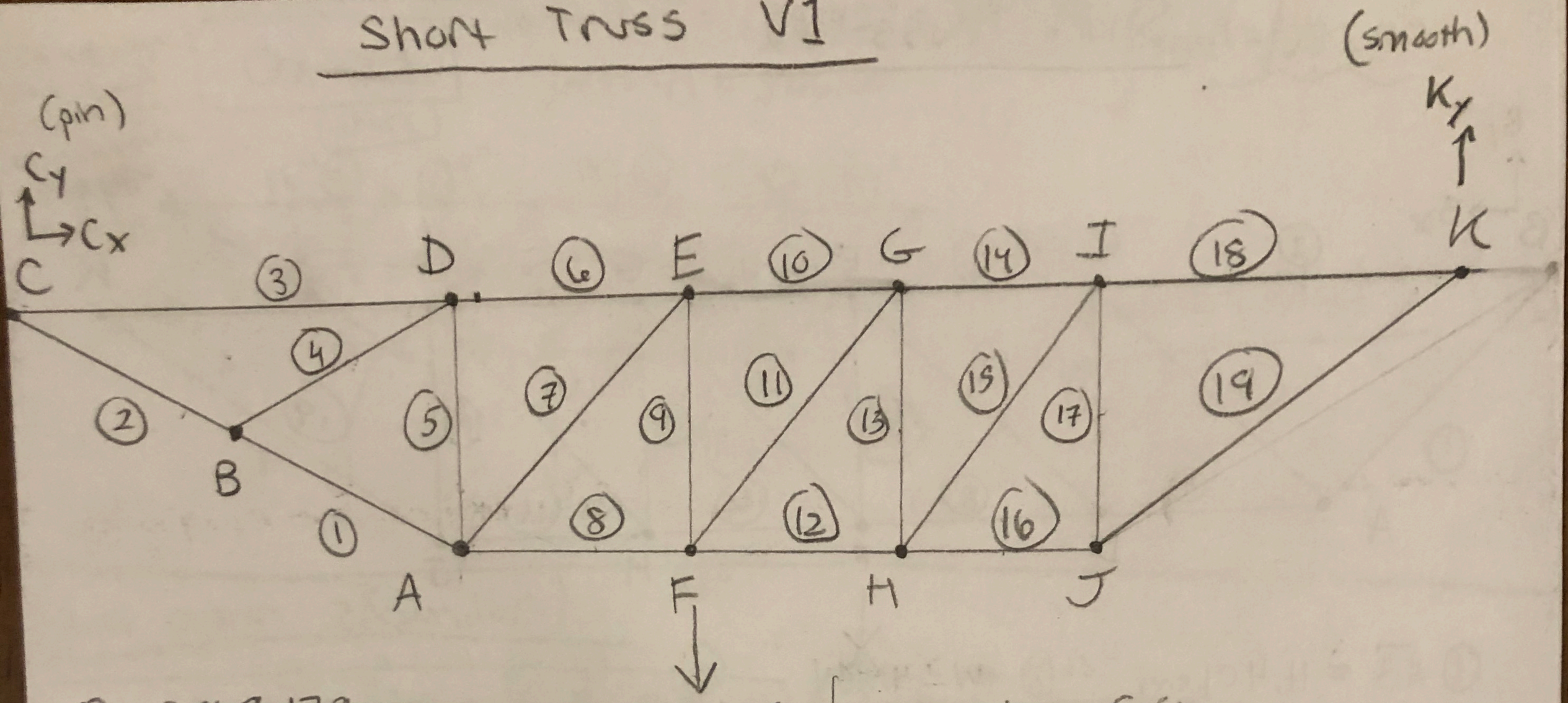
Short Truss V1



$W \geq 4.90N$

① $AB \approx 9.179cm$
② $BC \approx 9.179cm$
③ $CD = 16cm$
④ $BD \approx 9.179cm$ An check
⑤ $AD = 9cm$
⑥ $DE = 9cm$
⑦ $AE \approx 12.728$
⑧ $AF = 9cm$
⑨ $EF = 9cm$
⑩ $EG = 9cm$
⑪ $FG \approx 12.728$
⑫ $FH = 9cm$
⑬ $GH = 9cm$
⑭ $GI = 9cm$
⑮ $HI \approx 12.728$
⑯ $HJ = 9cm$
⑰ $IJ = 9cm$
⑱ $IK = 13cm$
⑲ $JK \approx 15.811cm$

Members Cost

$200.53cm \Rightarrow \$200.53$

$\Rightarrow \$201.00$

Joints

$11 \times \$10 = \$110$

total

$\$311.00$

pin at C $\rightarrow C_x$ and C_y

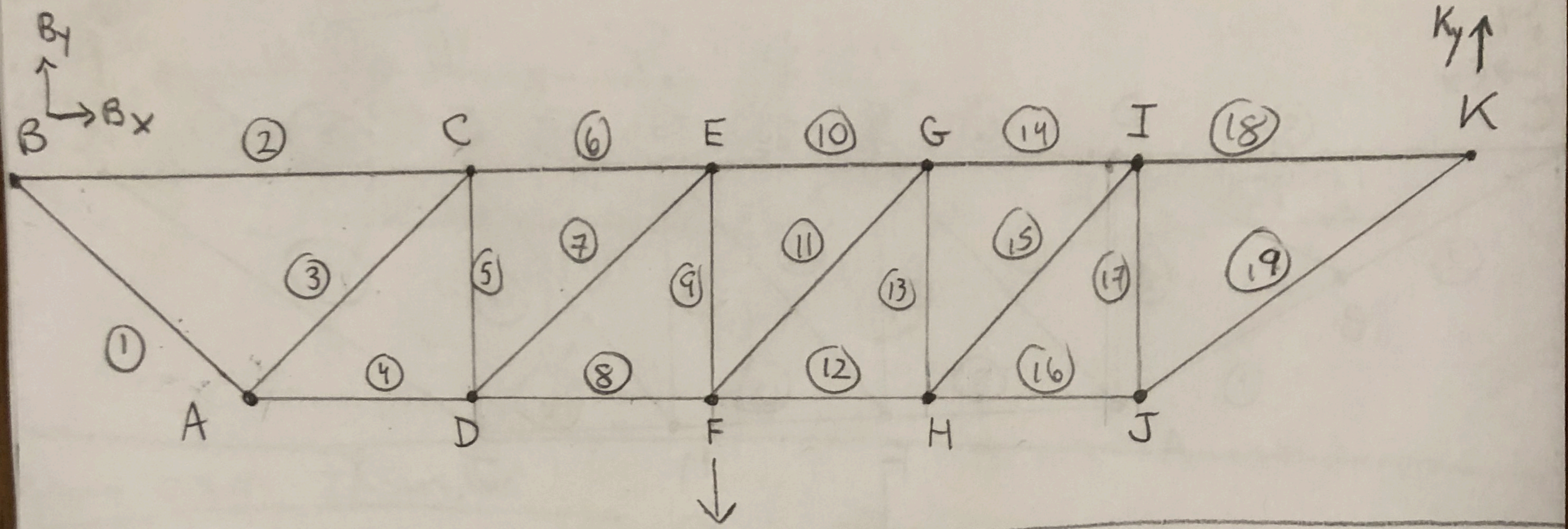
smooth at K K_y

CE = 25cm (W is 25cm (+) from C)

$\angle DAB \approx 60.64°$

$\angle BCD \approx 29.35°$

Short Truss V2



① $\overline{AB} \approx 11.401\,cm$
② $\overline{BC} \approx 16\,cm$
③ $\overline{AC} \approx 12.728cm$
④ $\overline{AD} = 9cm$
⑤ $\overline{CD} = 9cm$
⑥ $\overline{CE} = 9cm$
⑦ $\overline{DE} = 12.728cm$
⑧ $\overline{DF} = 9cm$
⑨ $\overline{EF} = 9cm$
⑩ $\overline{EG} = 9cm$
⑪ $\overline{FG} = 12.728cm$
⑫ $\overline{FH} = 9cm$
⑬ $\overline{GH} = 9cm$
⑭ $\overline{GI} = 9cm$
⑮ $\overline{HI} = 12.728cm$
⑯ $\overline{HJ} = 9cm$
⑰ $\overline{IJ} = 9cm$
⑱ $\overline{IK} = 13cm$
⑲ $\overline{JK} \approx 15.811cm$

Cost

Members

206.12 cm ≈ 207cm
(round up)
$207

Joints = 11 × $10
= $110

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total cost

$317.00

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pin at B → B_x and B_y
smooth at K → K_y

$\angle BAC \approx 82.875°$

$\angle ABC \approx 52.125°$

$BE = 25cm \rightarrow r_x = 25cm$
(x distance from F to B = 25cm)