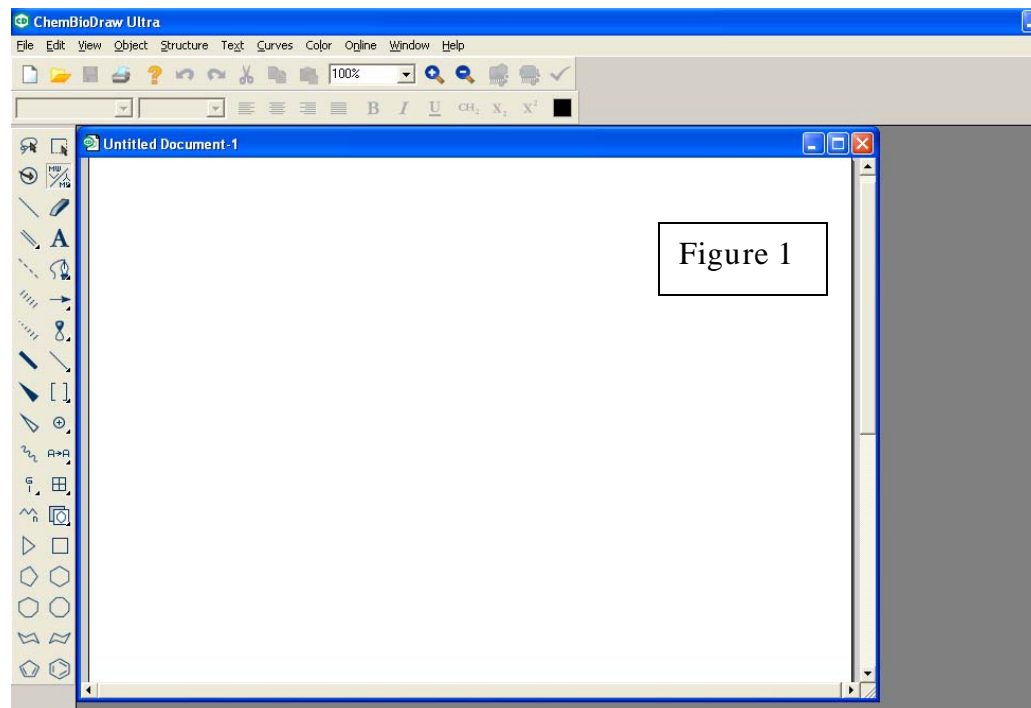


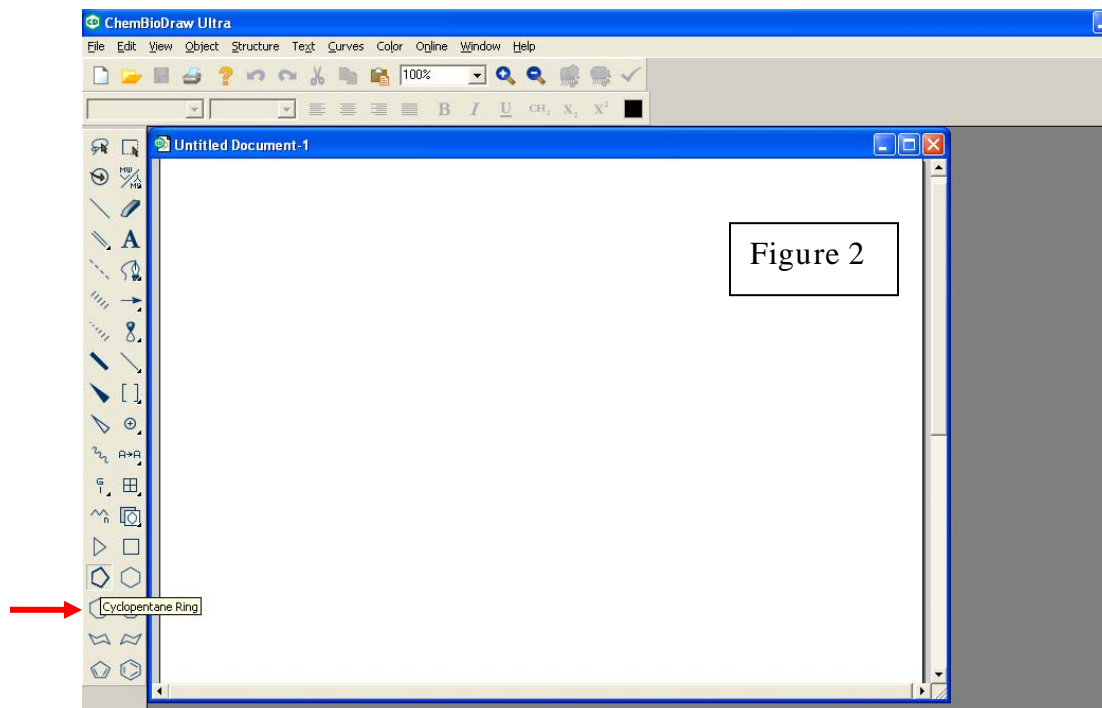
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By Dr. Dave Keller (Jan 2009)

1. Open ChemBioDraw Ultra, to the screen shown in Fig. 1.

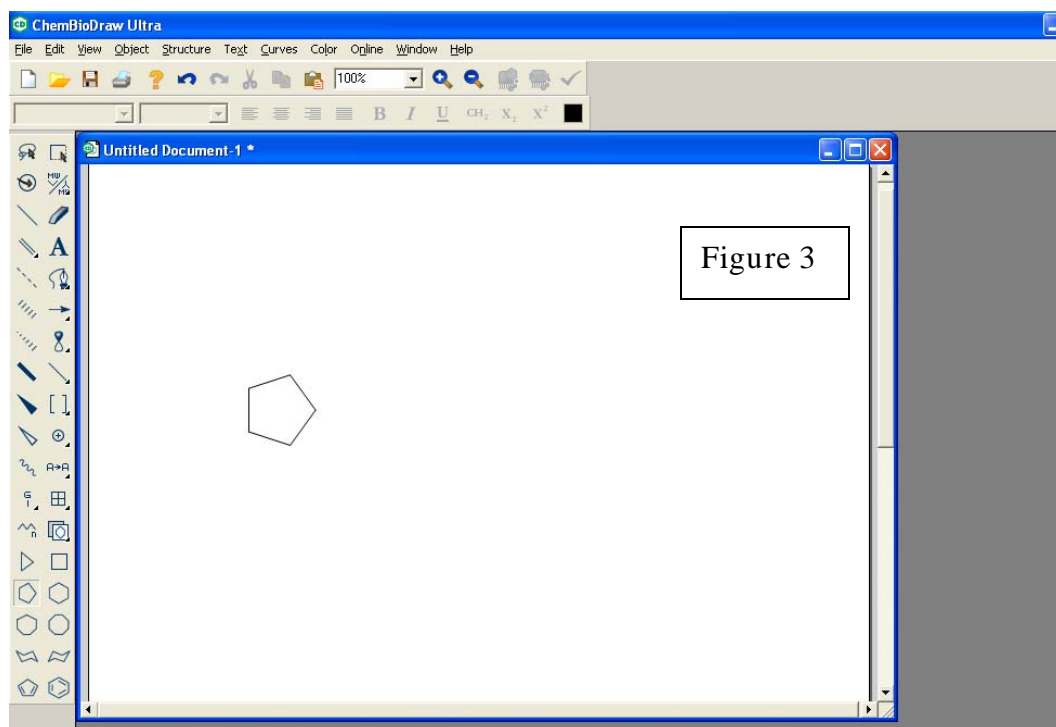


2. Click on the cyclopentane ring (lower left in Figure 2), then move the cursor to the right, and click on the drawing. The center of the ring appears where clicked (Figure 3).

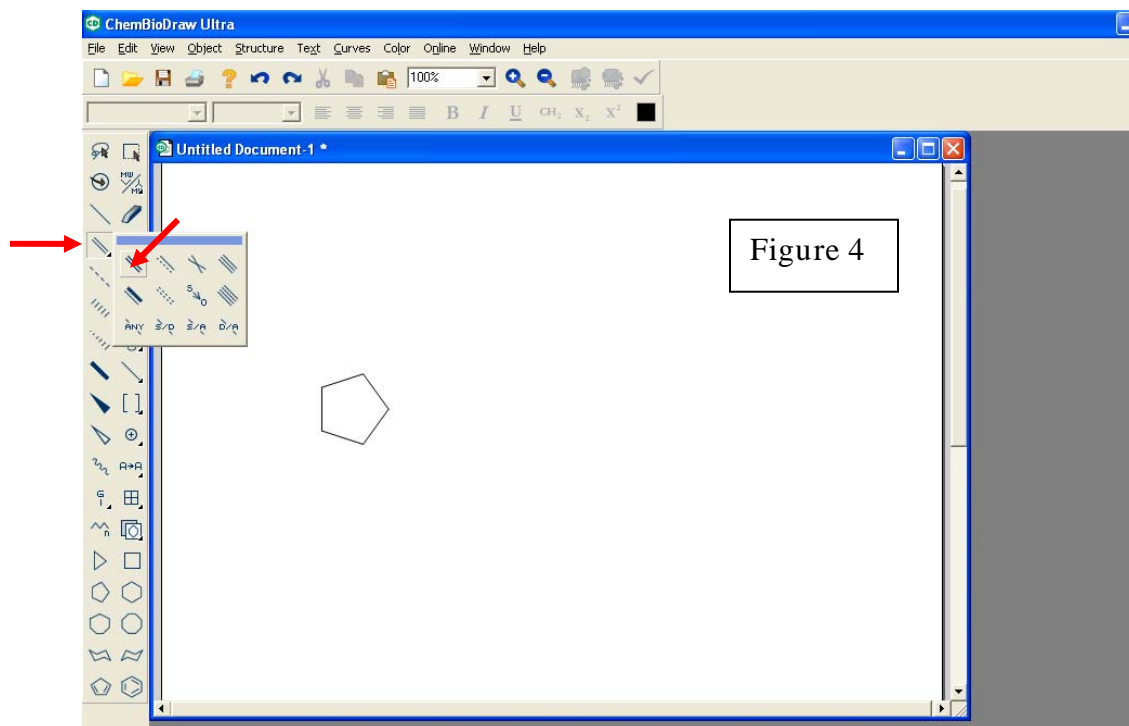


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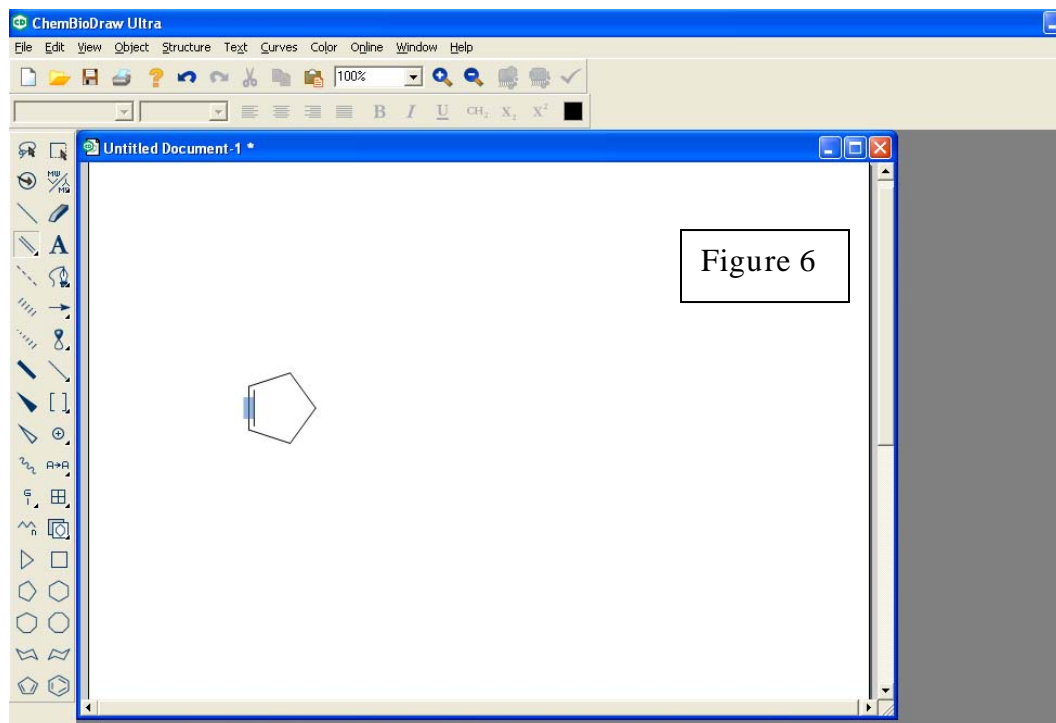
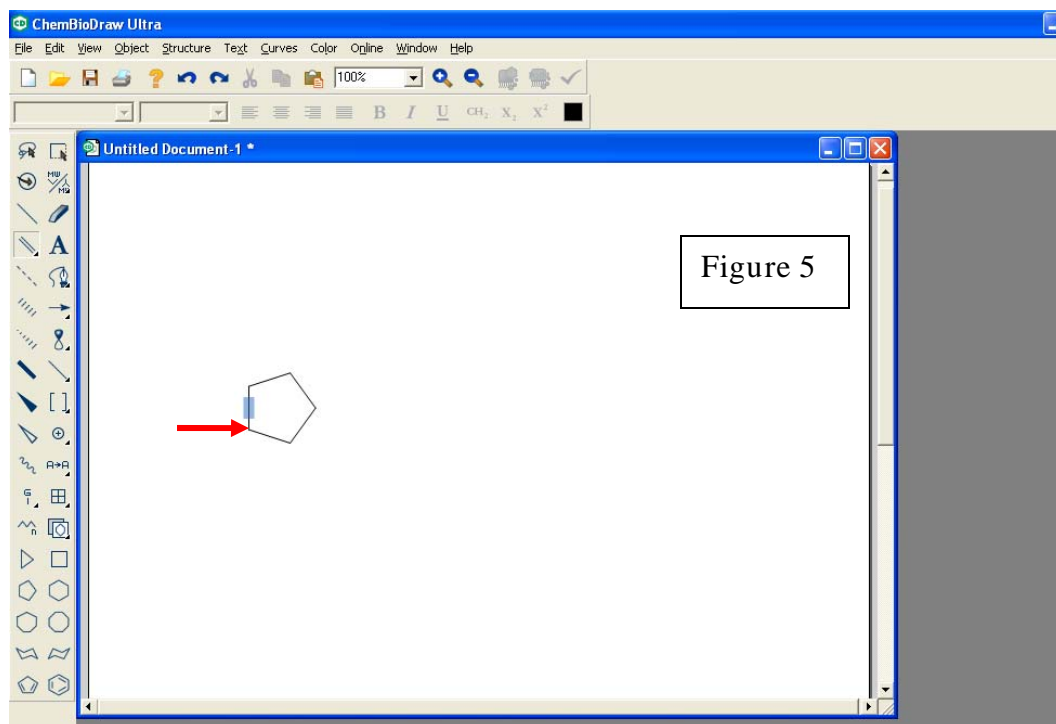


3. Click and hold the double bond (on the left panel), and slide the cursor to the right to select the double bond (in the box of bond types), as shown in Figure 4.



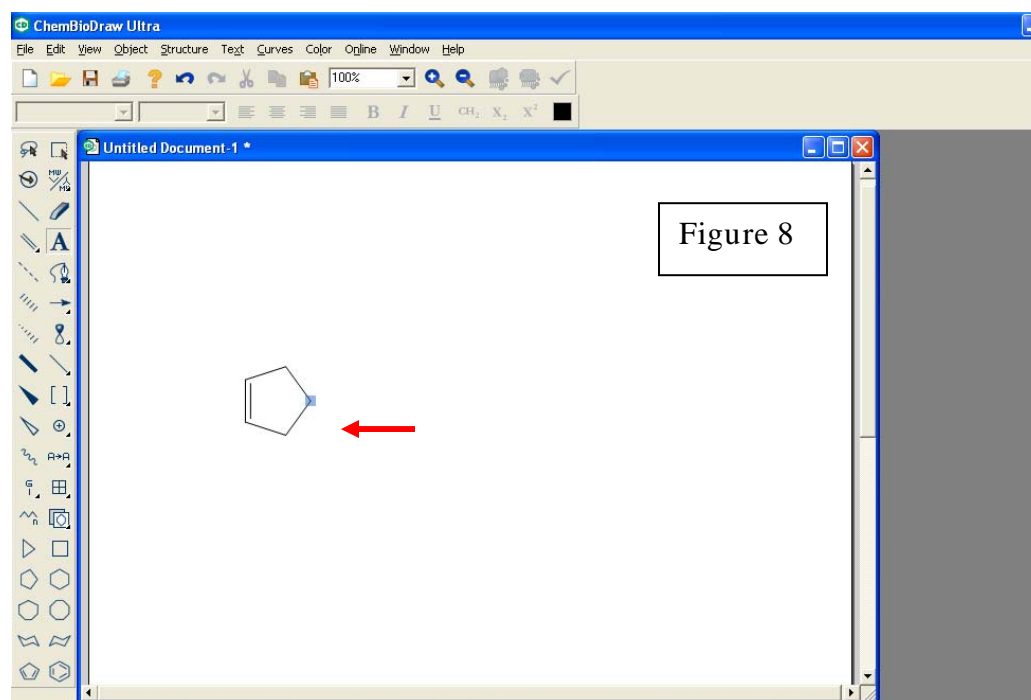
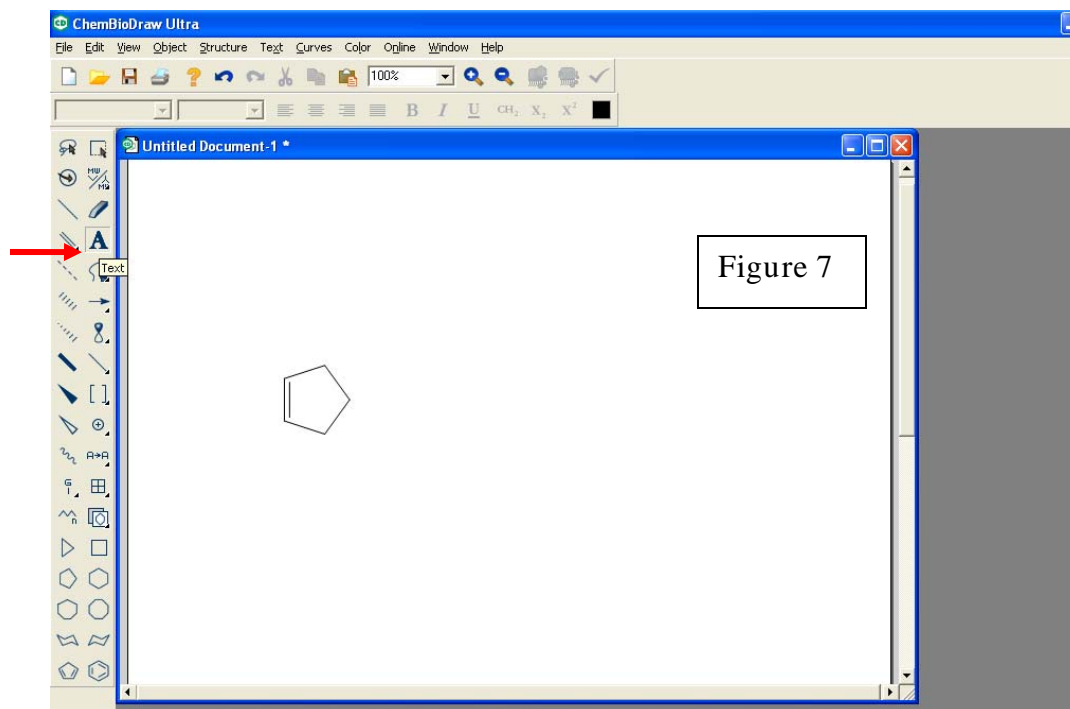
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4. Place the cursor on the vertical bond. It will turn blue, as shown in Figure 5. Click on it, to obtain the double bond shown in Figure 6.



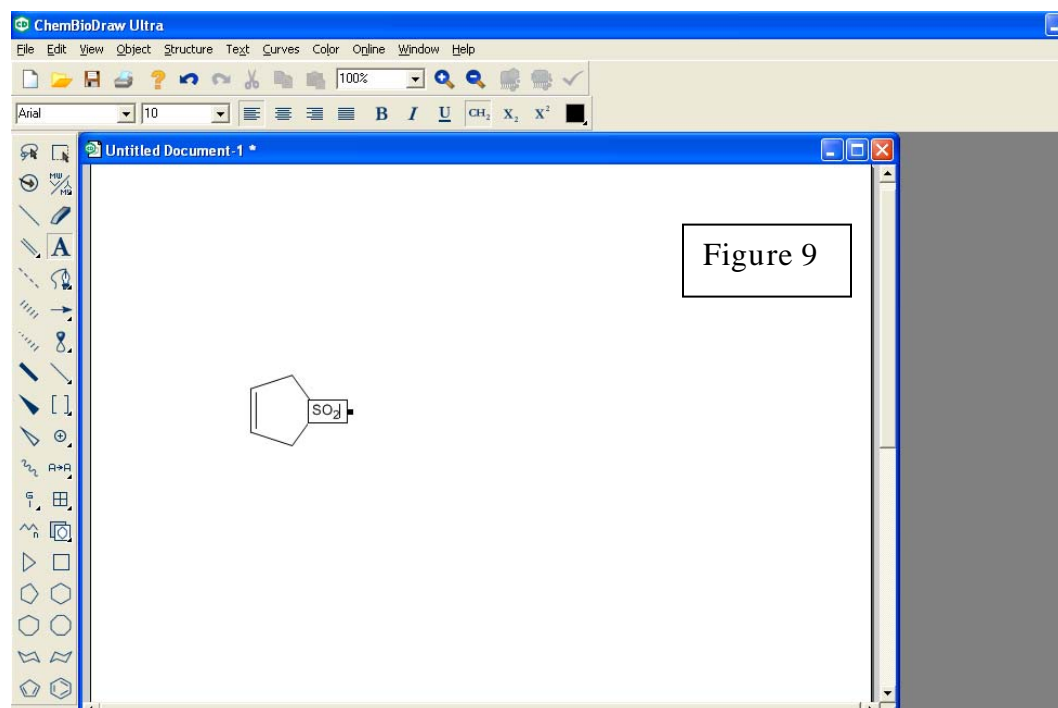
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5. Click on the A [Text] on the left side, as shown in Figure 7. Move the cursor to the location where the SO₂ should be, and it will show a blue square as shown in Figure 8.

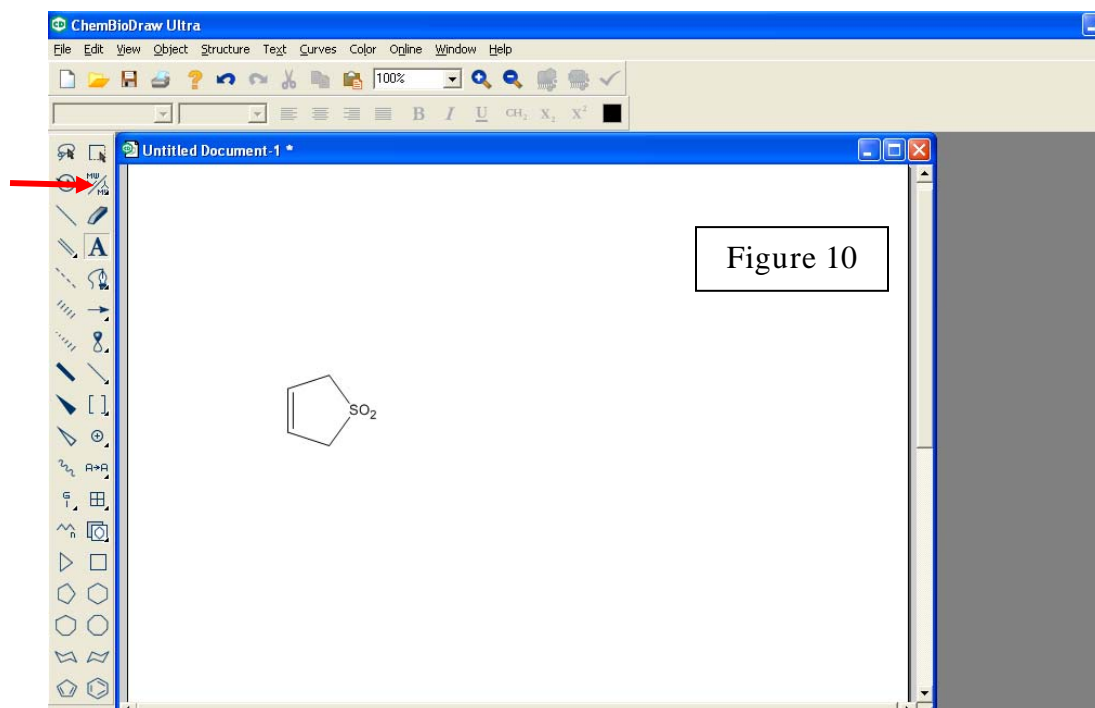


6. Click on the blue spot in Figure 8, and it will open up a text box. Type in SO₂, as shown in Figure 9. If the 2 does not show up as a subscript, highlight the SO₂, and click on the CH₂ in the toolbar on the 2nd row of tools from the top.

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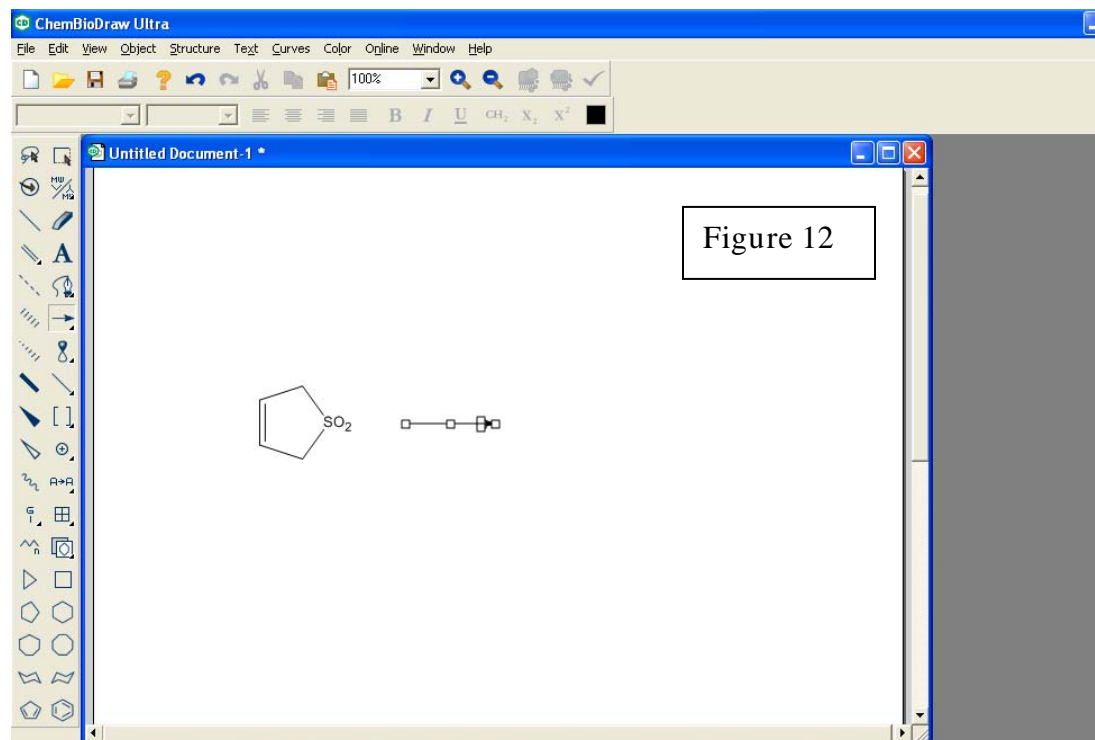
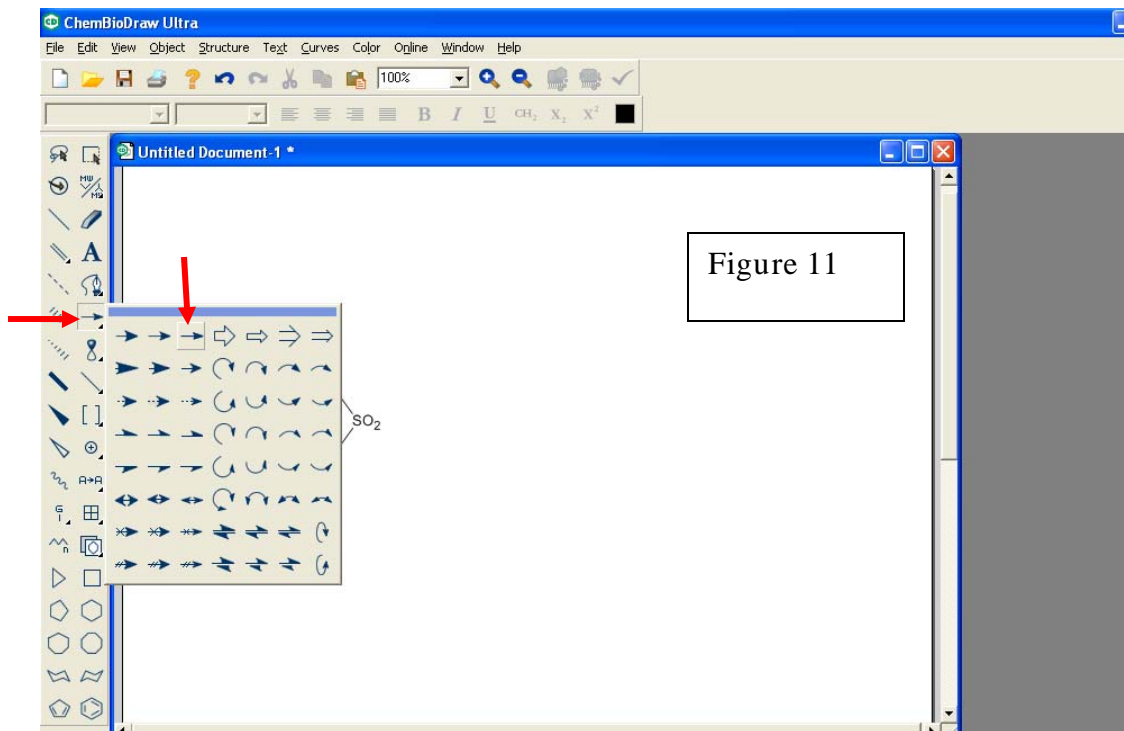


7. After typing in the text, click anywhere on the left (see red arrow) to get to Figure 10.

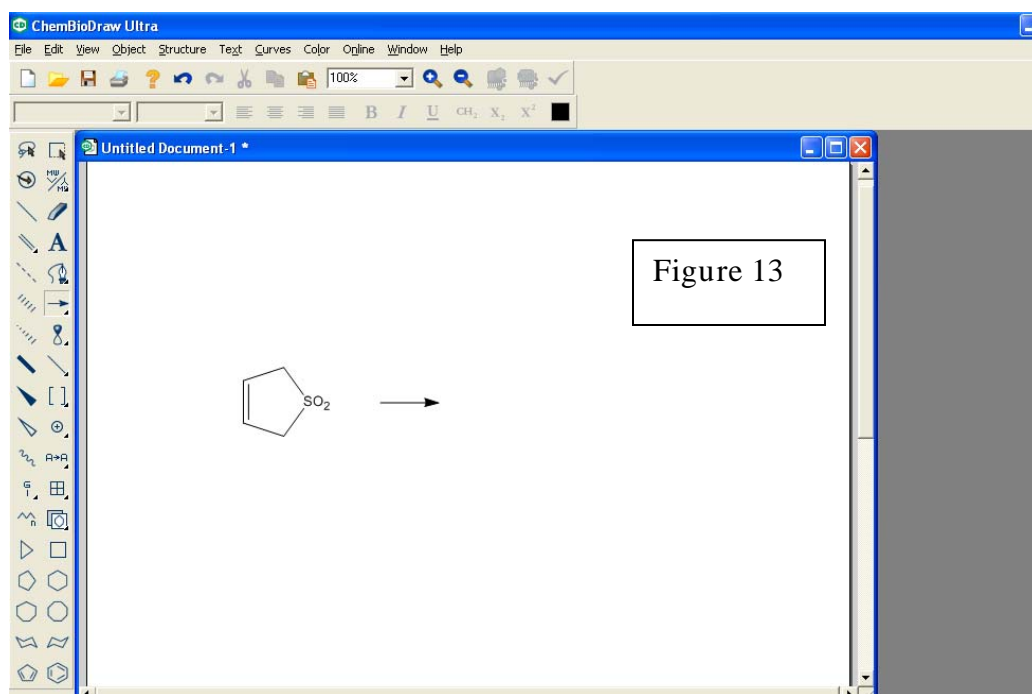


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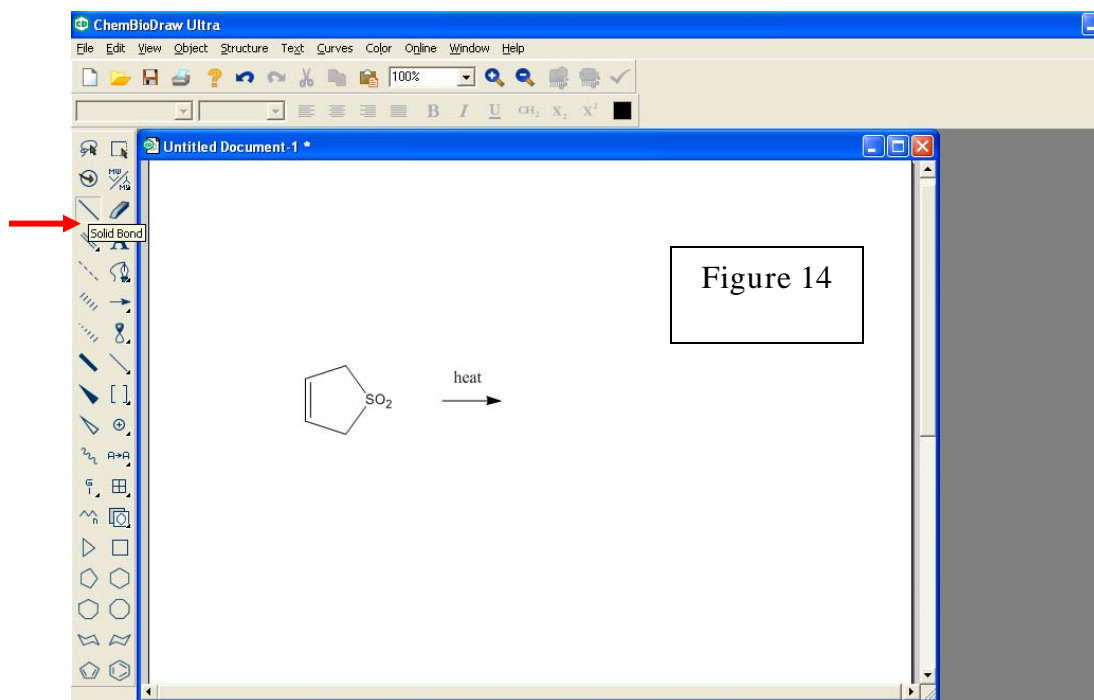
8. Click and hold the cursor on the horizontal arrow, and slide to the right to select the 3rd arrow to the right as shown in Figure 11. Then release, and click on the drawing to locate the arrow where desired, as shown in Figure 12. You can grab the arrow at either end to lengthen or shorten either end, then click on the drawing to reach Figure 13.



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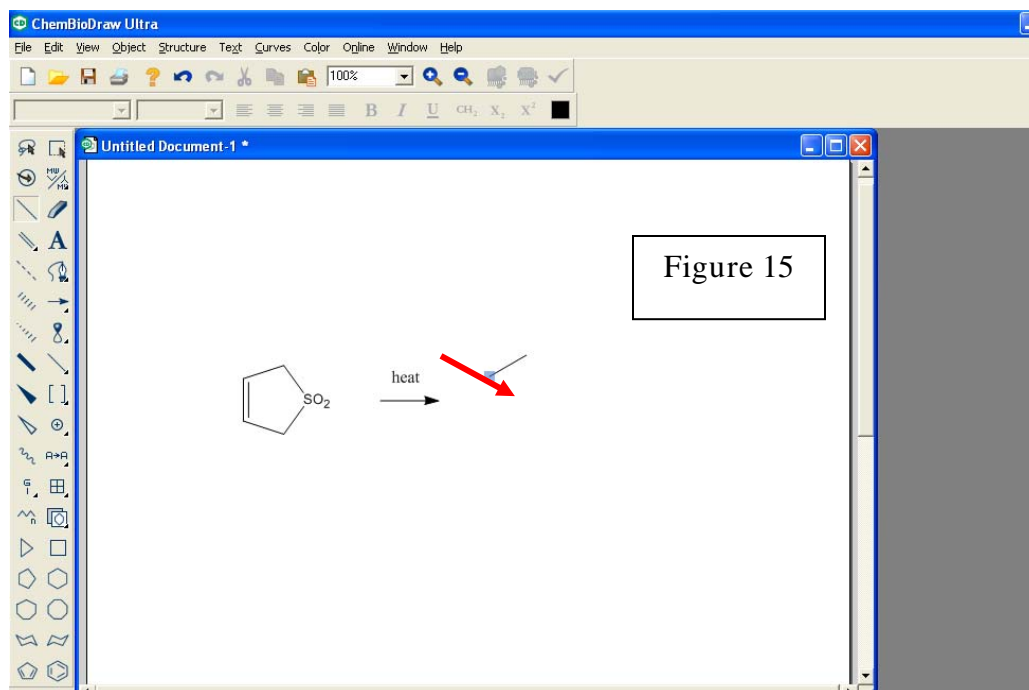


9. Use the A [text] tool, as shown in Steps 5 and 6, to add the word “heat” above the arrow, then select the solid bond tool (see red arrow), as shown in Figure 14.

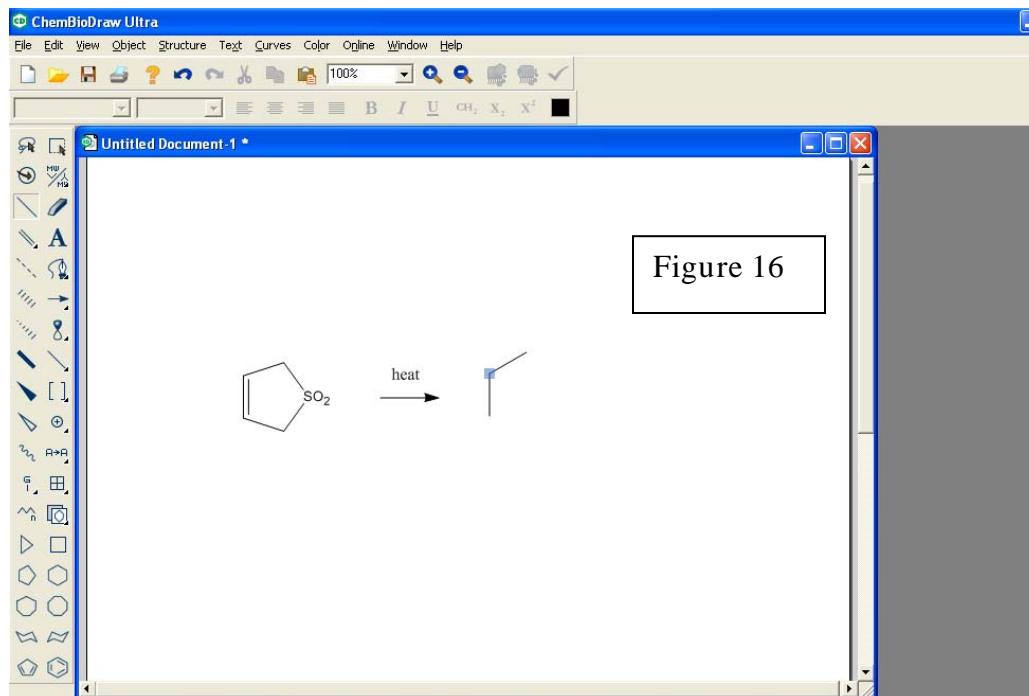


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10. Then click on the drawing where the blue square is shown in Figure 15, to produce the bond shown extending to the right from the blue square at 45 degrees.



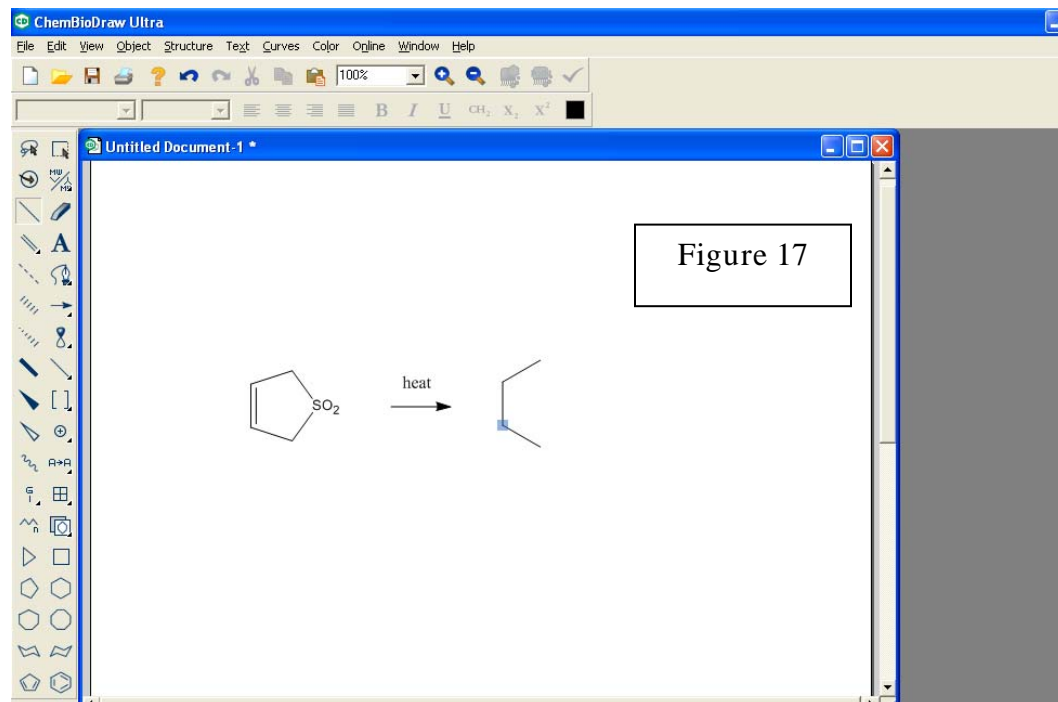
11. Then click again on the blue square to produce the vertical bond shown in Figure 16.



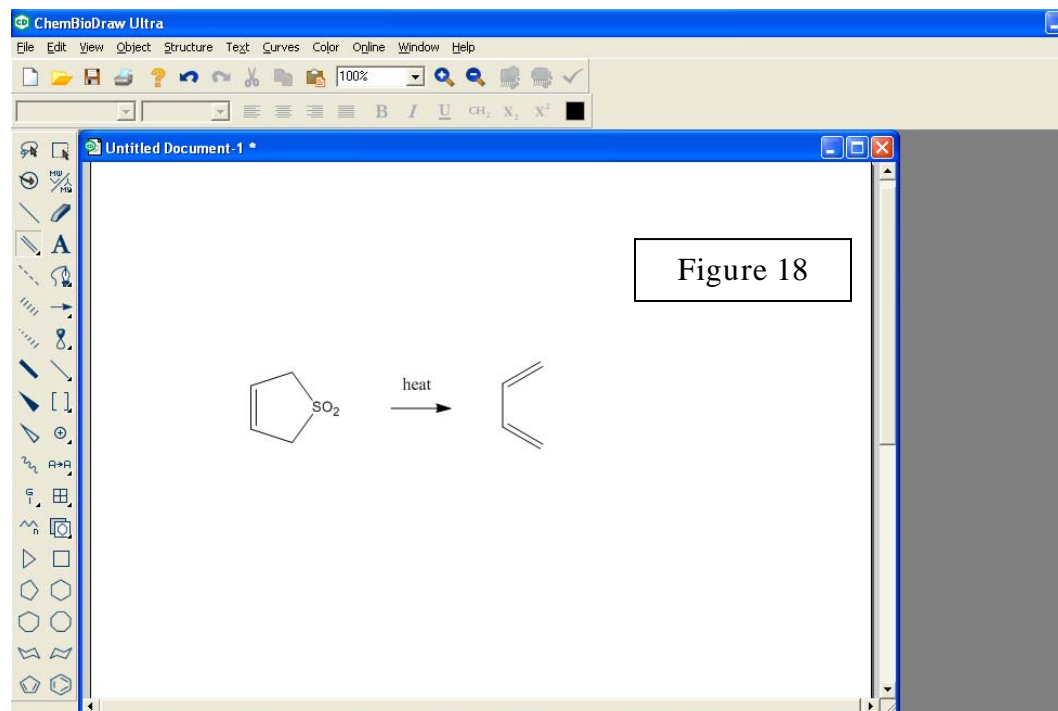
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12. Then click where the blue square is shown in Figure 17 to add the 3rd bond.

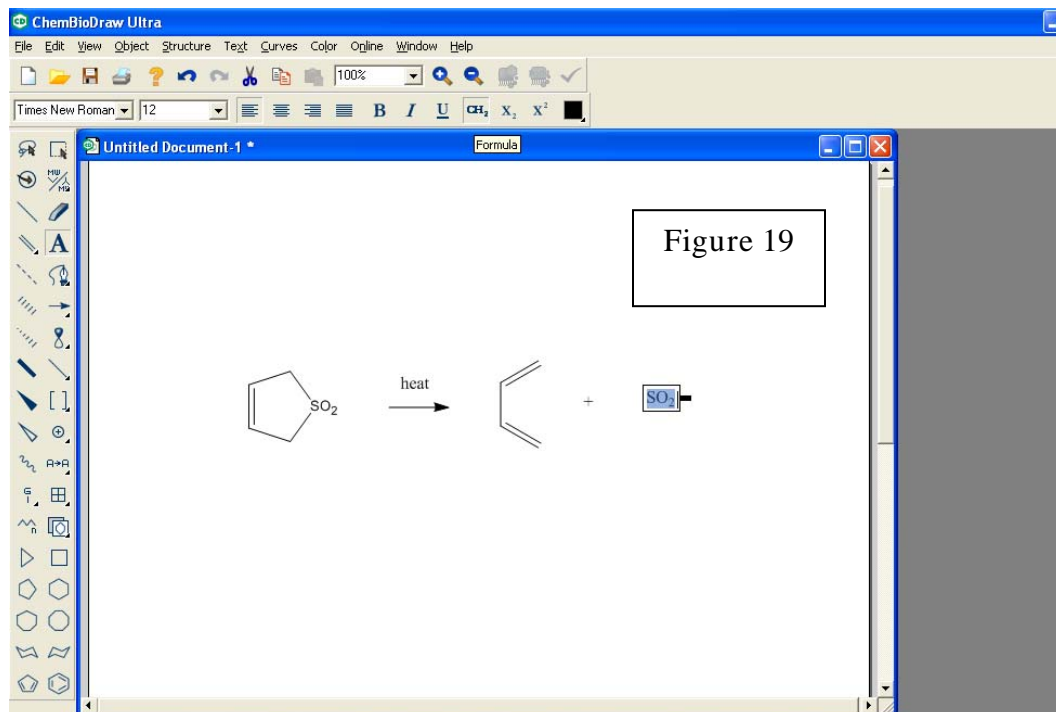


13. Then click on the double bond tool as shown in steps 3 and 4, to add double bonds to each of the locations shown in Figure 18.

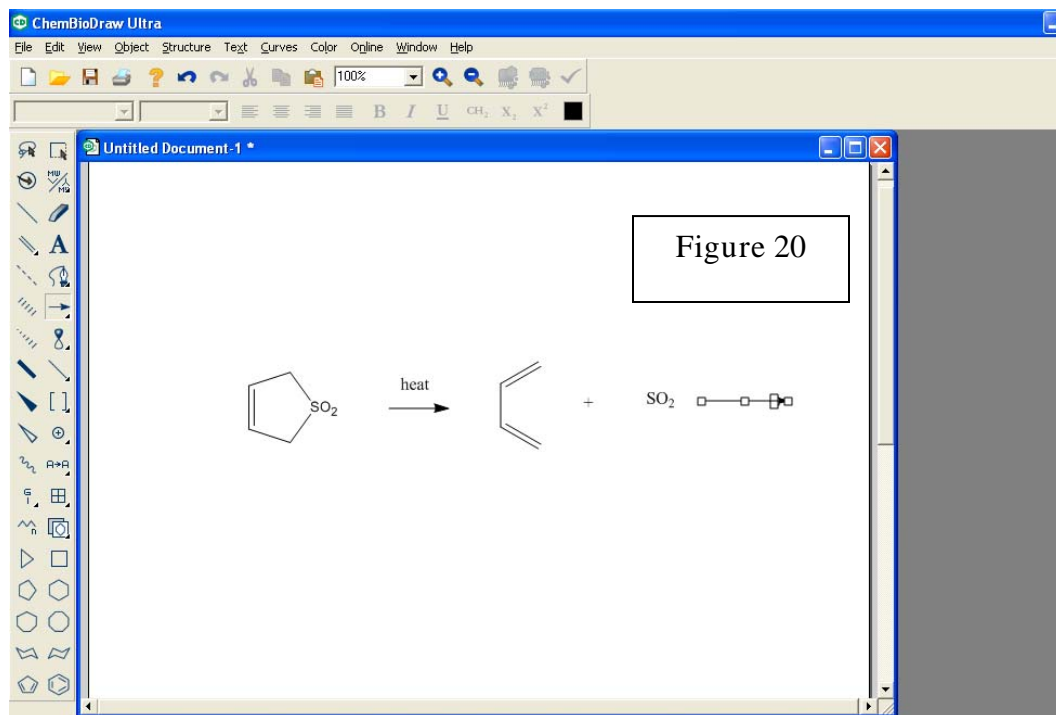


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14. Then use the A [text] tool to add the + and SO₂ as shown in Figure 19.

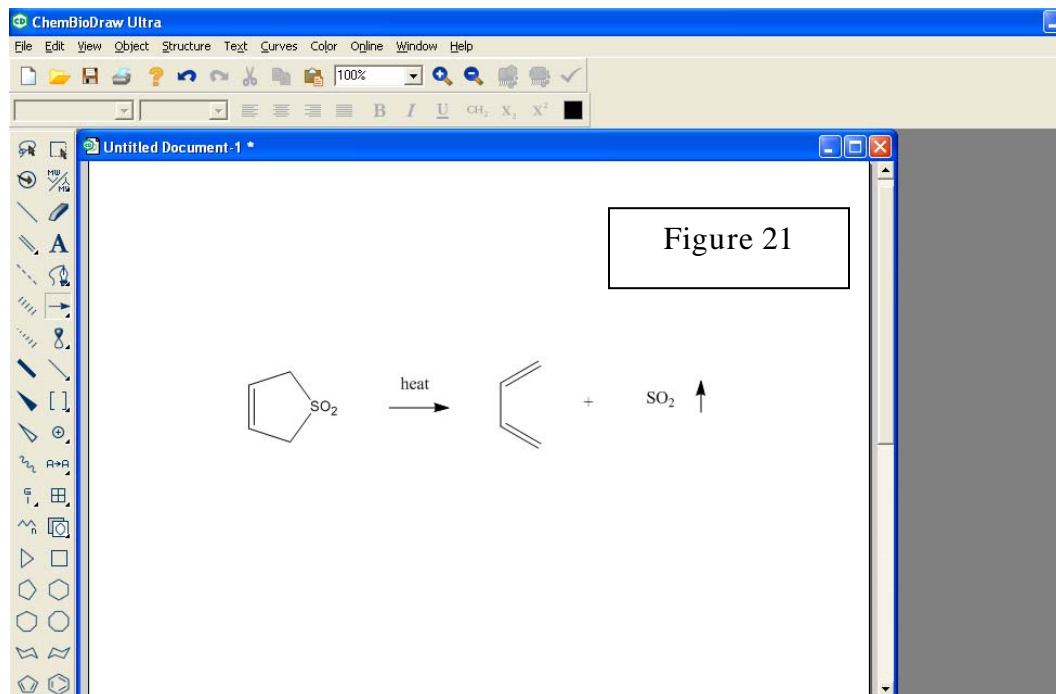


15. Then use the arrow tool to add the arrow as shown in Figure 20

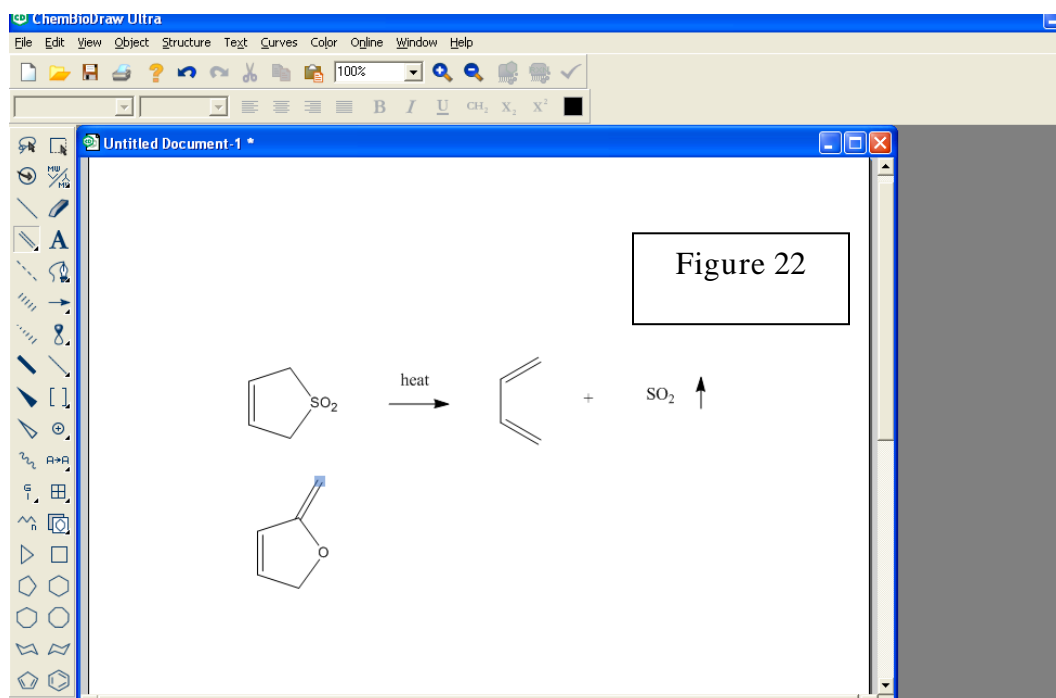


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16. Then click and hold on the right end of the arrow, and pull end up to the vertical position, then shrink down until as shown in Figure 21.



17. Then using the cyclopentane, the double bond, and A [text] tools, create the object shown on the bottom left in Figure 22. Click and drag the double bond from the blue square to the cyclopentane. Repeat this, and add O, to get the object shown in Figure 23.



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18. One can use the lasso tool on the upper left to encircle any object(s) and then move it/them to any location on the drawing page. With this information and the other tools on the left panel, one should be able to write any chemical reactions as needed.

