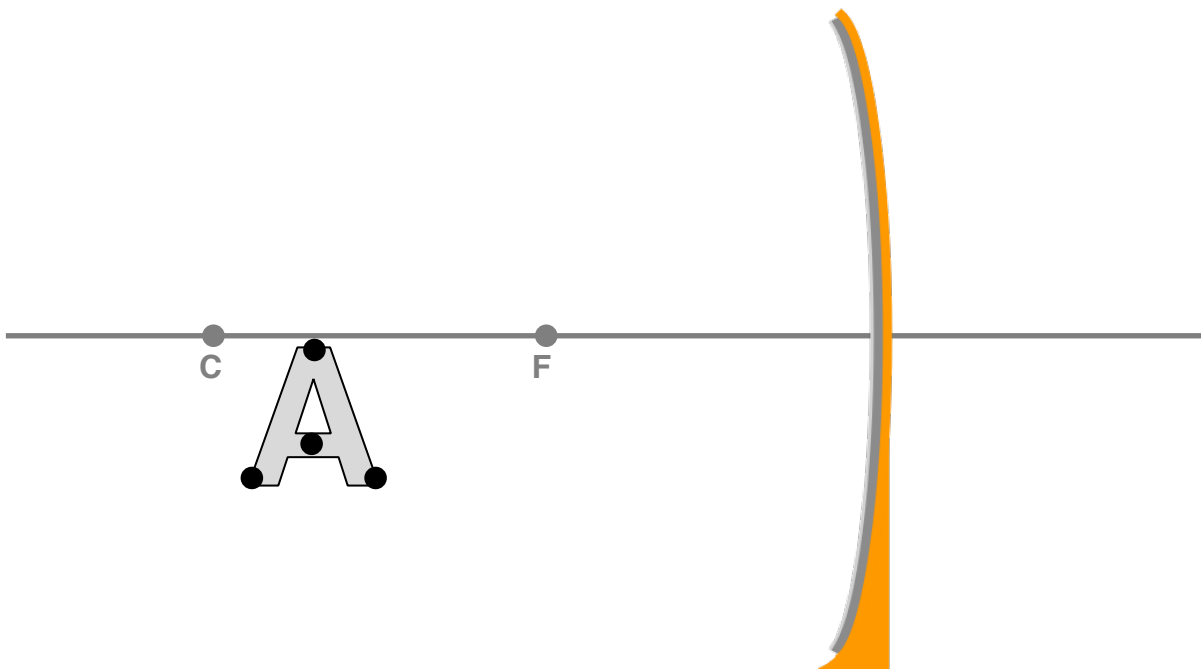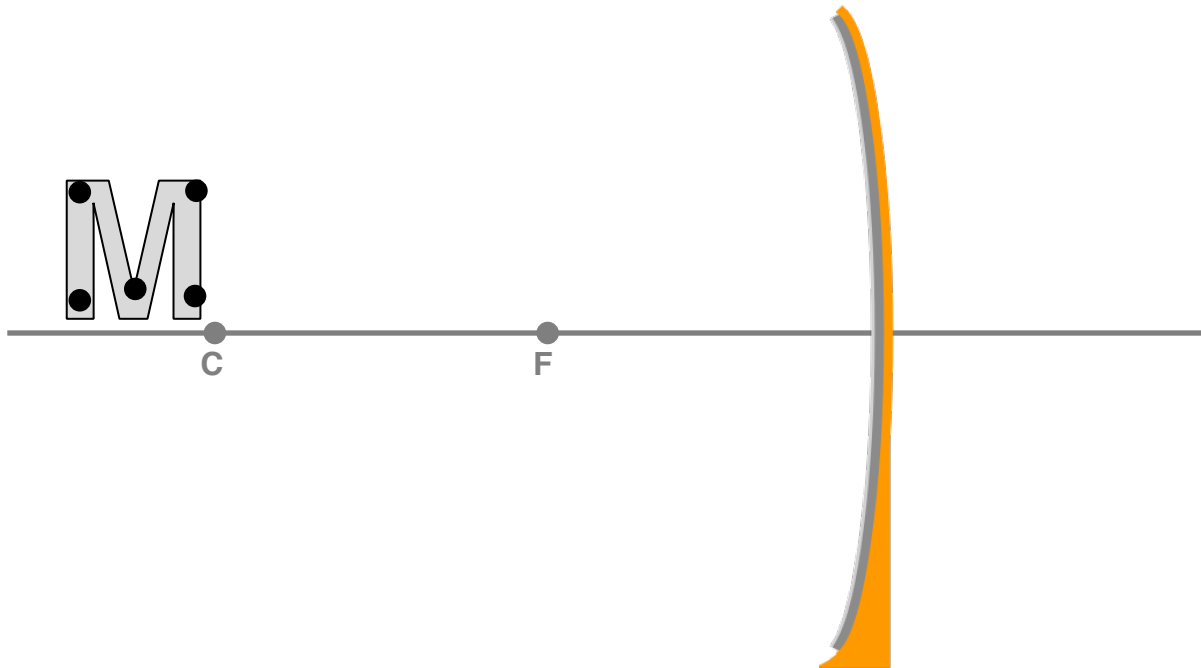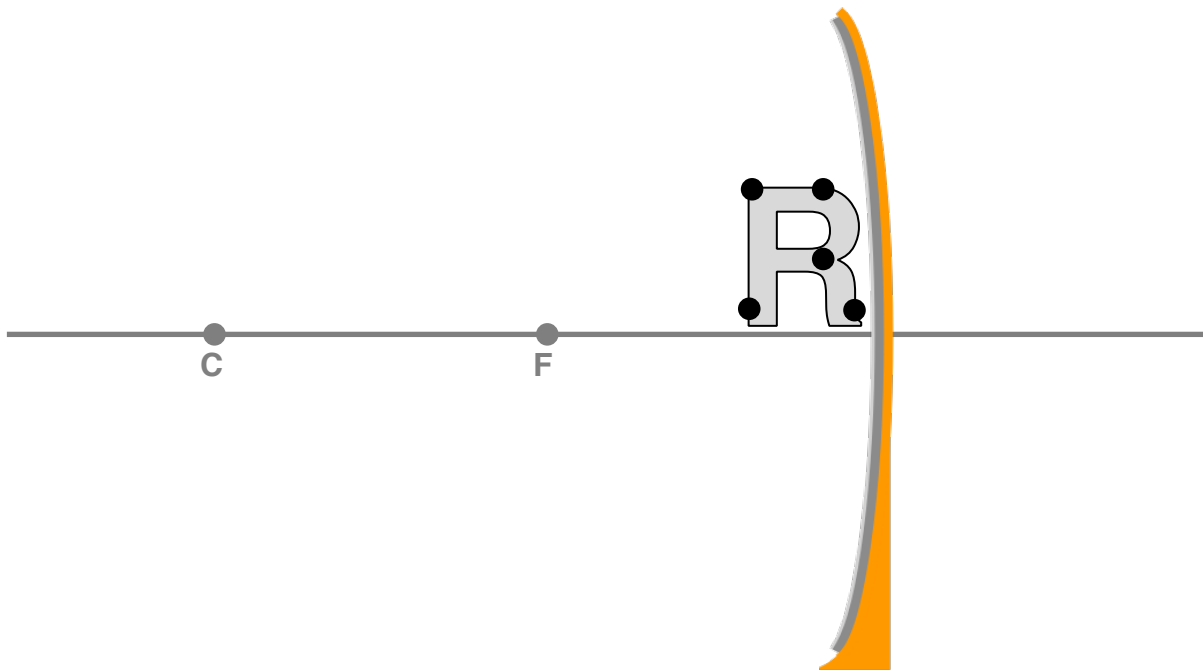## Concave Mirror Image Formation

For each mirror and letter object below, construct ray diagrams for each marked dot to show the location and appearance of the image. That's 4-5 ray diagrams per letter. Draw your rays *lightly* (but visibly) and mark your image points *boldly*.

Questions:

1. Why do you need to ray diagram so many points on the letter "M" to see the complete image of the letter?

2. Where does the image of the letter "M" appear?

3. Is the image of the letter M larger, smaller, or the same size as the object?

4. Is the image of the letter M upright or inverted?

5. In what way is the image of the letter M distorted?

6. Where does the image of the letter "A" appear?

7. Is the image of the letter A larger, smaller, or the same size as the object?

8. Is the image of the letter A upright or inverted?

9. In what way is the image of the letter A distorted?

10. Where does the image of the letter "R" appear?

11. Is the image of the letter R larger, smaller, or the same size as the object?

12. Is the image of the letter R upright or inverted?

13. In what way is the image of the letter R distorted?

14. Use a ray diagram model to predict the appearance of the image of the image arrow drawn below.