

Part P Problems

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The answers given below, obtained from sketches, are accurate to within 10-15%
Remember: if the image is behind the mirror, the image is virtual.

Concave Mirrors

1. The focal point of a concave mirror is 60 cm from the mirror. A 40-cm tall object is placed 40 cm from the mirror.

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| (a) How far from the mirror is the image? | <i>Answer: 120 cm</i> |
| (b) How tall is the image? | <i>Answer: 120 cm</i> |
| (c) Is the image upright, or inverted? | <i>Answer: upright</i> |
| (d) Is the image real, or virtual? | <i>Answer: virtual</i> |

2. The focal point of a concave mirror is 60 cm from the mirror. A 40-cm tall object is placed 100 cm from the mirror.

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| (a) How far from the mirror is the image? | <i>Answer: 150 cm</i> |
| (b) How tall is the image? | <i>Answer: 60 cm</i> |
| (c) Is the image upright, or inverted? | <i>Answer: inverted</i> |
| (d) Is the image real, or virtual? | <i>Answer: real</i> |

Convex Mirrors

1. The focal point of a convex mirror is 60 cm from the mirror. A 20-cm tall object is placed 40 cm from the mirror.

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| (a) How far from the mirror is the image? | <i>Answer: 25 cm</i> |
| (b) How tall is the image? | <i>Answer: 10 cm</i> |
| (c) Is the image upright, or inverted? | <i>Answer: upright</i> |
| (d) Is the image real, or virtual? | <i>Answer: virtual</i> |

2. The focal point of a convex mirror is 20 cm from the mirror. A 20-cm tall object is placed 10 cm from the mirror.

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| (a) How far from the mirror is the image? | <i>Answer: 5-10 cm</i> |
| (b) How tall is the image? | <i>Answer: 15 cm</i> |
| (c) Is the image upright, or inverted? | <i>Answer: upright</i> |
| (d) Is the image real, or virtual? | <i>Answer: virtual</i> |