

This print-out should have 14 questions. Multiple-choice questions may continue on the next column or page – find all choices before answering. The due time is Central time.

Please notice that for your homework to be considered towards your grade, it needs to be submitted one hour before the corresponding recitation starts.

PLEASE REMEMBER THAT YOU MUST CARRY OUT YOUR CALCULATIONS TO AT LEAST THREE SIGNIFICANT FIGURES. YOUR ANSWER MUST BE WITHIN ONE PERCENT OF THE CORRECT RESULT TO BE MARKED AS CORRECT BY THE SERVER.

001 (part 1 of 1) 4 points

A concave mirror has a focal length of 51.3 cm.

Determine the object position for which the resulting image is upright and four times the size of the object. Answer in units of cm.

002 (part 1 of 1) 4 points

If an object 0.597 m from a concave mirror produces a real image 0.348 m from the mirror, what is the radius of curvature of the mirror? Answer in units of m.

003 (part 1 of 1) 4 points

A convex mirror has a focal length of 60 cm. What is the position of the resulting image if the image is erect and 6 times smaller than the object? Answer in units of cm.

004 (part 1 of 1) 3 points

A converging lens has a focal length of 44.7 cm.

If the object is 69.3 cm from the lens, what is the image distance? Answer in units of cm.

005 (part 1 of 3) 3 points

A diverging lens has a focal length of -24 cm. An object 1.14 cm in height is placed 84.6 cm in front of the lens.

Locate the position of the image. Answer in units of cm.

006 (part 2 of 3) 4 points

What is the magnification?

007 (part 3 of 3) 4 points

Find the height of the image. Answer in units of cm.

008 (part 1 of 4) 3 points

A thin converging lens of focal length 10 cm forms an image of an object placed 19.5 cm from the lens.

Find the image distance. Answer in units of cm.

009 (part 2 of 4) 3 points

What is the magnification for an object distance of 19.5 cm?

010 (part 3 of 4) 3 points

Find the location of the image for an object distance of 3.46 cm. Answer in units of cm.

011 (part 4 of 4) 4 points

Calculate the magnification for an object distance of 3.46 cm.

012 (part 1 of 3) 3 points

Two converging lenses, each of focal length 8 cm, are separated by 39 cm. An object is 18 cm to the left of the first lens.

What is the position of the final image? Answer in units of cm.

013 (part 2 of 3) 4 points

What is the overall lateral magnification of the image?

014 (part 3 of 3) 4 points

What is the nature of the image?

1. Impossible to determine.
2. The image is real and inverted.
3. The image is virtual and inverted.
4. The image is virtual and upright.
5. The image is real and upright.