

This print-out should have 12 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. Work submitted after this time, but before the DUE DATE on top of this page, will be accepted but not graded.

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.

Christmas Tree Ornament 02

36:04, trigonometry, numeric, > 1 min, normal.

001

An object is 15 cm from the surface of a reflective spherical Christmas-tree ornament 6 cm in diameter.

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

002

What is the magnification of the image?

Concave Mirror 15

36:03, trigonometry, numeric, > 1 min, normal.

003

If an object 0.5 m from a concave mirror produces a real image 0.18 m from the mirror, what is the radius of curvature of the mirror? Answer in units of m.

Concave Mirror 12

36:03, trigonometry, numeric, > 1 min, normal.

004

A concave mirror has a focal length of 40 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.

Concave Mirror Image 02

36:03, trigonometry, numeric, > 1 min, normal.

005

A certain concave spherical mirror has a focal length of 10 cm.

Find the location of the image for an object distance of 25 cm. Answer in units of cm.

006

What is the magnification for an object distance of 25 cm?

007

Find the location of the image for an object distance of 5 cm. Answer in units of cm.

008

Calculate the magnification for an object distance of 5 cm.

Convex Mirror 02

36:04, trigonometry, numeric, > 1 min, normal.

009

A convex mirror has a focal length of 20 cm. What is the position of the resulting image if the image is erect and 4 times smaller than the object? Answer in units of cm.

Convex Mirror Image

36:04, trigonometry, numeric, > 1 min, normal.

010

An object 3 cm high is placed 20 cm from a convex mirror having a focal length of -8 cm.

Find the position of the final image. Answer in units of cm.

011

What is the magnification? Answer in units of %.

012

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