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INSTRUCTOR

Joel DeWitt

East Carolina University

Chapter 25 (Homework)

Current Score

QUESTION

1

2

3

4

5

6

7

8

9

POINTS

-1/2

-1/2

-1/2

-1/2

-1/2

-1/1

-1/1

-1/1

-1/1

TOTAL SCORE

-1/14

0.0%

Due Date

THU, OCT 29, 2020

11:59 PM EDT

[Request Extension](#) **Description****Assignment Submission & Scoring**

Assignment Submission

For this assignment, you submit

answers by question parts. The number of submissions remaining for each question part only changes if you submit or change the answer.

Assignment Scoring

Your last submission is used for your score.

1. [-/2 Points] DETAILS COLFUNPHYS1 25.P.004.

MY NOTES

ASK YOUR TEACHER

PRACTICE ANOTHER

An object is placed 12.6 cm in front of the cornea. (The cornea is thin and has approximately parallel sides so that the reflection that occurs as light travels from air to cornea to aqueous humor is essentially the same as though the aqueous humor were directly in contact with the air. The aqueous humor has index of refraction $n = 1.34$ and the radius of curvature of cornea is 7.8 mm.)

(a) What is the image distance for the image formed by the cornea alone?

(b) The image formed by the cornea serves as an object for the lens. Treat the lens as a thin lens 7 mm behind the cornea. Find the optical power of the lens necessary to form an image on the retina, 22 mm from the center of the lens.

2. [-/2 Points] DETAILS COLFUNPHYS1 25.P.005.

MY NOTES

ASK YOUR TEACHER

PRACTICE ANOTHER

(a) Find the power of the lens necessary to correct an eye with a far point of 25.5 cm

(b) Find the power of the lens necessary to correct an eye with a far point of 49.0 cm.

3. [-/2 Points] DETAILS COLFUNPHYS1 25.P.006.

MY NOTES

ASK YOUR TEACHER

PRACTICE ANOTHER

(a) Find the far point of an eye for which a prescribed lens has an optical power of -0.62 d.

(b) Find the far point of an eye for which a prescribed lens has an optical power of -3.8 d.

4. [-/2 Points]

DETAILS

COLFUNPHYS1 25.P.022.

MY NOTES

ASK YOUR TEACHER

PRACTICE ANOTHER

A person with a range of vision from 43 cm to ∞ uses a 14 cm focal length magnifier.

(a) Find the angular magnification when the magnifier is used with the eye relaxed.

(b) Find the angular magnification when the magnifier is used with the eye focused at its near point.

5. [-/2 Points]

DETAILS

COLFUNPHYS1 25.P.023.

MY NOTES

ASK YOUR TEACHER

PRACTICE ANOTHER

An object 1.2 cm high is viewed under a magnifier of focal length 19 cm by a person with a near point of 30 cm and a far point of ∞ .

(a) Find the angle subtended by the image formed by the magnifier when the eye is relaxed.

(b) Find the angle subtended by the image formed by the magnifier when the eye is focused at its near point.

6. [-/1 Points]

DETAILS

COLFUNPHYS1 25.P.028.

MY NOTES

ASK YOUR TEACHER

PRACTICE ANOTHER

What is the angular magnification of a microscope using an objective with a magnification of 23.7 and an ocular with a magnification of 10.9?

7. [-/1 Points]

DETAILS

COLFUNPHYS1 25.P.029.

MY NOTES

ASK YOUR TEACHER

PRACTICE ANOTHER

A microscope objective with a magnification of 14 is used in a microscope with a magnification of 54. Find the focal length of the ocular if the ocular's image is formed at the eye's near point, 22 cm from the eye. Neglect the distance between the eye and the ocular.

8. [-/1 Points]

DETAILS

COLFUNPHYS1 25.P.035.

MY NOTES

ASK YOUR TEACHER

PRACTICE ANOTHER

An astronomical telescope has an objective with a focal length of 0.60 m and an ocular with a focal length of 3.0 cm. What is its angular magnification?

9. [-/1 Points]

DETAILS

COLFUNPHYS1 25.P.036.

MY NOTES

ASK YOUR TEACHER

PRACTICE ANOTHER

The objective and ocular of an astronomical telescope are 1.46 m apart. The ocular has a focal length of 4.95 cm. What is the telescope's angular magnification?

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