Name: _____ Lenses & Mirrors Practice

Form: 0

Version: 0

1. T F The image of a flame formed by passing through a pinhole and cast on a screen will be inverted.

2. If you photograph a tree with a pinhole camera, what sort of image will you get on the film?
   a) Real
   b) Upside down
   c) Smaller than the tree
   d) All of the above
   e) none of the above

3. Which of the following is not a primary colour?
   a) green
   b) yellow
   c) red
   d) blue

4. Colours seen on a photograph are a result of
   a) refraction
   b) diffraction
   c) absorption and reflection
   d) interference

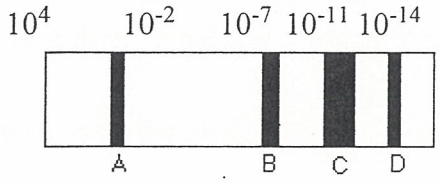
5. Children are often heard to ask, "Daddy, why is the sky blue?". The correct answer to this question would be
   a) molecules in the Earth's atmosphere absorb red light, leaving only blue light in our atmosphere.
   b) the colour of space, when backlit by the sun, is blue.
   c) molecules in the Earth's atmosphere scatter blue light, which is then reflected down to the surface of the Earth by dust and water vapour.
   d) molecules in the Earth's atmosphere refract incoming light, such that only blue light passes into the lower atmosphere.
   e) the cause is not known.

6. A beam of white light passes obliquely from air into glass. Which color experiences the greatest change in direction ?
   a) red
   b) yellow
   c) green
   d) blue

7. For the given object,  which of the following best depicts the image formed inside a pinhole camera?

a)  b)  c)  d) 

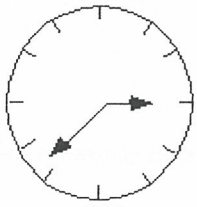
8. For the electromagnetic spetrum below, which of the following shows the visible portion of light in the proper location? The visible spectrums are repersented as solid blank bands.



a) A
b) B
c) C
d) D

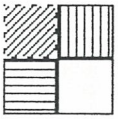
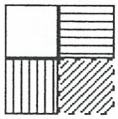
9. Images formed by a pinhole are...
   a) upside down.
   b) inverted left for right.
   c) upside down and inverted left for right.
   d) very small.

10. It is 3:36, and a clock is viewed through a pinhole. Which diagram corresponds to the image of the clock that is seen?

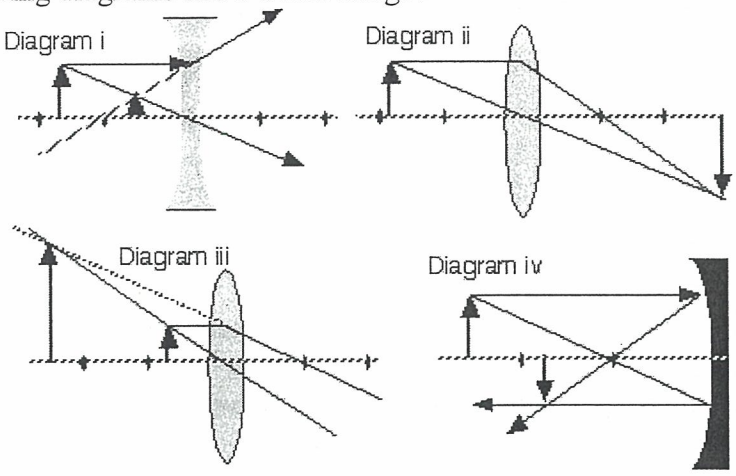
a) 
b) 
c) 
d) 
e) none of these

11. A real image is an:
   a) image that can be cast onto a screen
   b) image that is made up of rays that only "seem" to come from the image location
   c) image that is seen in plane mirrors
   d) image that is always upright

12. An optical instrument produces an image that is vertically inverted and magnified 3 times. If the object in the diagram is viewed with this instrument, which image would be seen? 

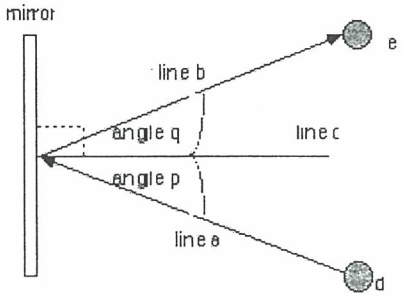
a) 
b) 
c) 
d) 
e) 

13. Which of the following diagrams show a real image?



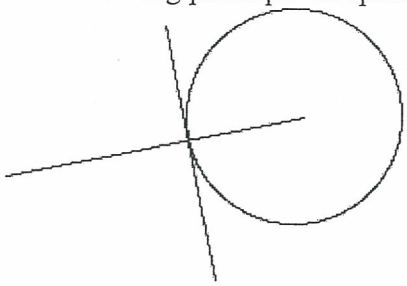
a) i, ii, iii, and iv
b) i and ii
c) i and iv
d) ii and iv
e) ii, iii and iv

14. In the diagram, what is the normal to the mirror?



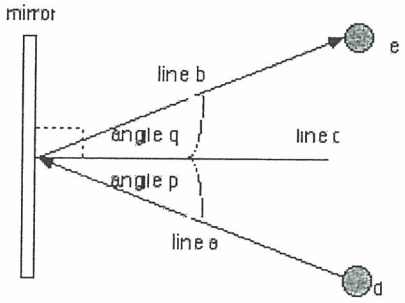
a) line a b) line b c) line c d) angle q e) there is no normal in the diagram.

15. The following diagram of an extended radius and a tangent line of a circle demonstrate how the law of reflection is used to show the following principle of spherical mirrors:



a) The reason that a light ray through the focus of a mirror is reflected back parallel to the principal axis.
b) The reason that diverging mirrors have virtual images.
c) A light ray that hits the mirror along a path through the mirror's centre of curvature will bounce straight back.
d) The reason that a light ray parallel to the principal axis is reflected back through the mirror's focus.
e) The reason that light rays that are through the centre of curvature are reflected through the mirror's focus.

16. In the diagram, what is the angle of incidence?



a) angle q
b) angle p
c) the angle between the mirror and line c
d) angle q + angle p
e) angle p plus 90 degrees

17. Which of the following is NOT true of plane mirrors and the images they form?
a) Light rays intersect at a point behind the mirror to form a real erect image.
b) The angles of reflection and incidence are equal.
c) A virtual image is formed at the same distance behind the mirror that the object is in front of the mirror.
d) The virtual image that forms is the same size as the object

18. Parabolic mirrors are often used in
a) department store dressing rooms
b) some camera lenses and telescopes
c) eyeglasses
d) all of the above

19. A real image is formed when
    a) light rays converge and pass through the image
    b) light rays seem to diverge from behind the mirror
    c) the image cannot be projected onto the screen
    d) rays farthest from the principle axis meet at the mirror's surface

20. T F The image of any object in a plane mirror is always located behind the mirror.

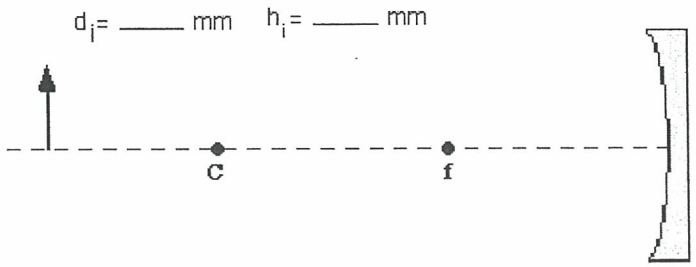
21. Which of the following best describes a concave mirror?
    a) It is shaped like the inside of a soup spoon.
    b) It allows a store keeper to see all around the store.
    c) It spreads light rays out.
    d) It is used by large trucks to improve visibility.

22. How is a mirror different from a lens?
    a) The mirror focuses light while the lens spreads it out.
    b) The mirror spreads light out while the lens focuses it.
    c) Mirrors are flat while lenses are curved.
    d) Mirrors allow light to bounce off of it while lenses allow light to pass through.

23. The focal length of a curved mirror is the:
    a) width of the mirror.
    b) distance from the mirror to the center of curvature.
    c) distance from the center of the mirror to the principal focus.
    d) distance from the image to the principal focus.

24. If you stand 5 m in front of a flat mirror, how far <u>behind the mirror</u> does your image appear to be?
    a) 0 m.
    b) 2.5 m.
    c) 5 m.
    d) 10 m.

25. Complete the ray diagram for the mirror shown below, identifying the location and height of the image. Note that the object is placed beyond the center of curvature for the **mirror**. *Marks will be assigned for accuracy!*
    ESTIMATE THE DISTANCE AND HEIGHT (3 marks)



You have completed the test!