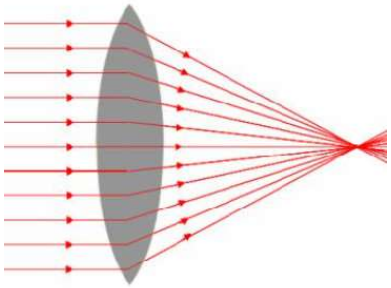
Name: Class:

Total Possible Marks: 30

Lenses and Images



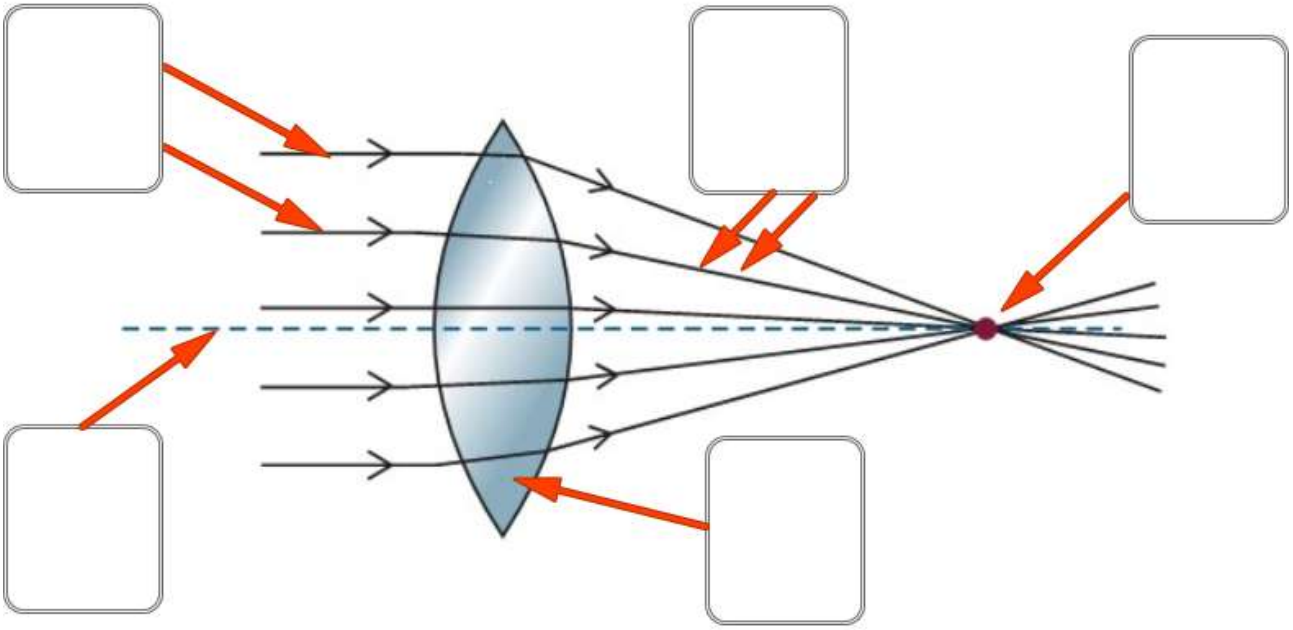
10

1. (a)_____ form (b)_____ by (c)_____ light and (d)_____ its (e)_____. There are 2 main types of lens - convex or (f)_____ and (g)_____ or diverging. They have different (h)_____ and have (i)_____ effects on (j)_____ rays.

images	*shapes*	*refracting*	*Lenses*	*opposite*
changing	*converging*	*direction*	*concave*	*light*

5

2. Study the diagram below, in the boxes label the parts indicated by the red arrows.



1

3. In a short paragraph, explain what is meant by a "real image"

1

4. The virtual image is formed when the light rays from point on an object are diverging after they have left the lens. A virtual image cannot be projected onto a screen.

   (A) True

   (B) False

____ 7

5. Look at the prompts below and enter the appropriate name for what is being described.

a. This is a type of lens which bulges outwards _____

b. This is a type of lens which caves inwards _____

c. This is a line which passes through the middle of the lens and is perpendicular to it _____

d. This is the distance from the centre of the lens to the principal focus _____

e. This type of lens causes parallel rays of light to divert (that is spread out) _____

f. This type of lens causes rays of light which are parallel to the axis to converge together _____

g. In a convex lens this point is the point at which rays hitting the lens parallel to the axis will meet _____

____ 6

6. Look at the statements below concerning convex lenses and decide which are true and which are false

a. (T) (F) Another name for a convex lens is a diverging lens

b. (T) (F) An incident ray passing through the principal focus before meeting the lens refracts through the lens and travels parallel to the axis

c. (T) (F) In a convex lens there is a principal focus on each side of the lens

d. (T) (F) A convex lens is a lens in which one or both sides curves inwards

e. (T) (F) An incident ray travelling parallel to the axis reflects back through the lens and passes through the principal focus on the same side as the incident ray's origin.

f. (T) (F) An incident ray passing through the centre of the lens will carry on in the same direction