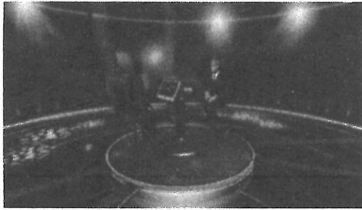


## The Great Photography Knowledge Quiz

3<sup>rd</sup> edition, Part- 2



by Clem Wehner

### DETERMINING THE SPEED OF A LENS

LOOK ON THE LENS:

1:3.5 MEANS IT'S AN  
f/3.5 SPEED LENS

(lowest possible f/stop)



**Q. What is the easiest way to determine the lowest f/stop of a lens (lens speed)?**

- a. refer to the camera's instruction manual exposure section
- b. look at the front of the lens
- c. Google it
- d. open the lens to the widest setting and read the f/stop scale

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**Q. What can be a problem when using a wide-angle lens?**

- a. the image is too wide
- b. wide angle lenses require more light
- c. shutter speed must be slower
- d. close objects appear larger

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- a. the image is too wide
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Q. What is a good technique when cropping images of people?

- a. don't show knees unless they are bent
- b. don't crop out part of the hair on a head
- c. it's best to crop out feet if very large
- d. don't crop at joints**

### WIDE ANGLE LENSES

CLOSE OBJECTS APPEAR LARGER



photo by christh david



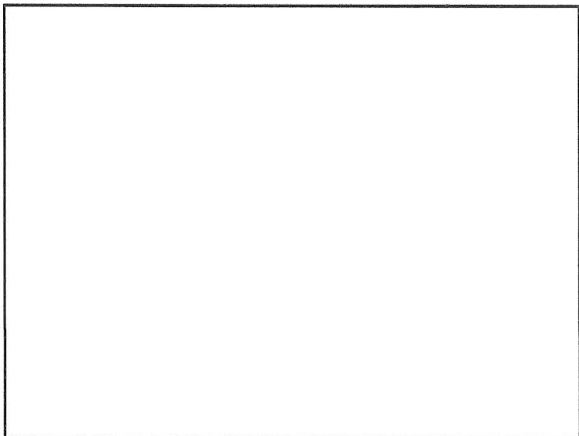
NY photo

A. What is a good technique when cropping images of people?

- a. don't show knees unless they are bent
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- c. it's best to crop out feet if very large
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### Don't crop at joints

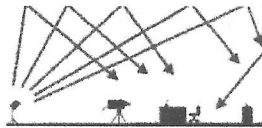




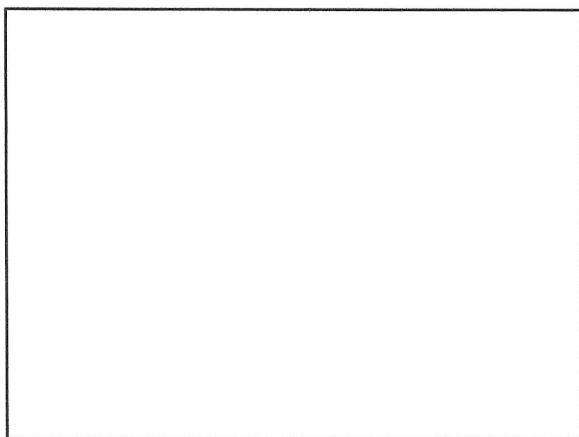
**Reflected light**

Light takes on the color of the object it's

bounced off of  
or  
passes through.

A diagram showing a light source on the left emitting several rays that reflect off a horizontal surface. The rays are shown as lines with arrows at their ends, illustrating the path of light.

- Q. Light reflecting off an object:**
- a. becomes more diffuse
  - b. shifts color to a warmer tone
  - c. is unchanged by the color of the object
  - d. takes on the color of the object



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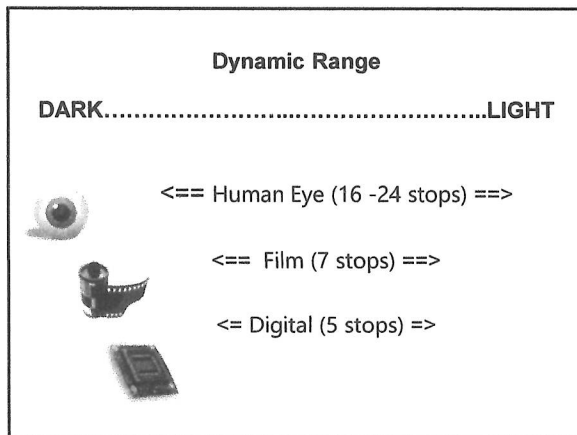
- Q. The average digital camera has a dynamic range of about 5 f/stops. What is the average dynamic range of the human eye?**
- a. 7 f/stops
  - b. 10 f/stops
  - c. 20 f/stops
  - d. 40 f/stops

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- a. 7 f/stops
- b. 10 f/stops
- c. 20 f/stops
- d. 43 f/stops

**Q. A technique for photographing a shiny round object is to:**

- a. Use a light to create specularity
- b. Use flat lighting to illuminate the object evenly
- c. Use an umbrella to diffuse the light
- d. Light the object from behind



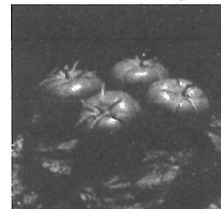
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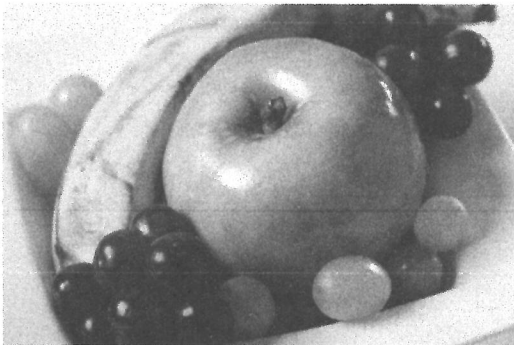
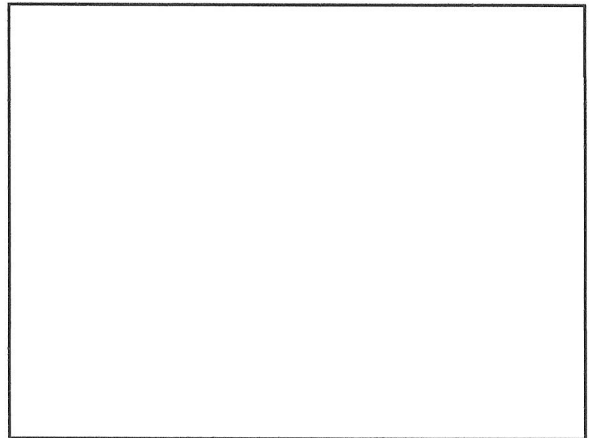
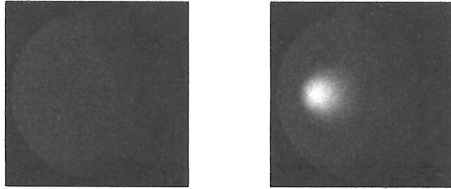
**SPECULARITY**

- Light reflecting off something in the photo.
- Usually a shiny spot or area on the subject.
- Comes from the light source.
- Generally same color as light source.





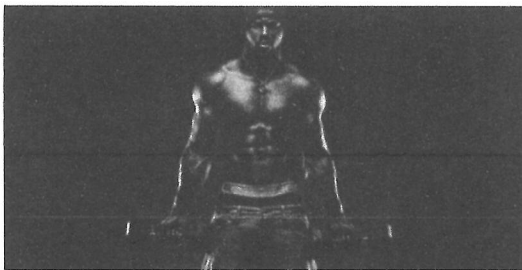
Specular Highlights Can Add Dimension



**Q. In a landscape photo, if you want to maximize clear focus of foreground objects AND distant objects:**

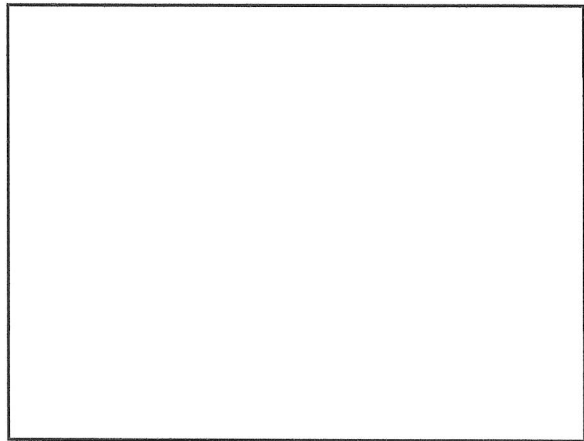
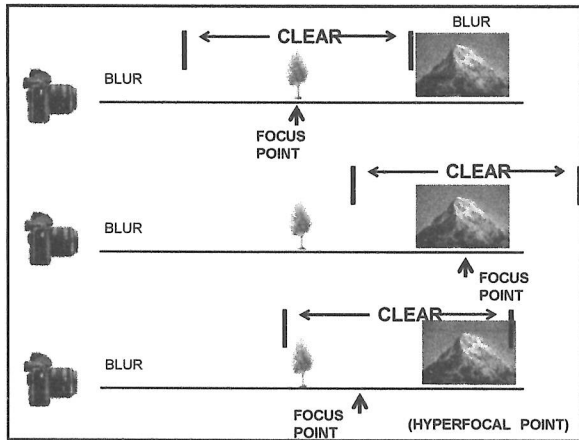
- a. use a low *f*/stop number
- b. focus on an object in the foreground
- c. focus on the most distant object
- d. focus on a point 1/3<sup>rd</sup> into the scene

**HIGHLIGHTS ARE AS IMPORTANT AS SHADOWS**



**A. In a landscape photo, if you want to maximize clear focus of foreground objects AND distant objects:**

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- b. focus on an object in the foreground
- c. focus on the most distant object
- d. focus on a point 1/3<sup>rd</sup> into the scene

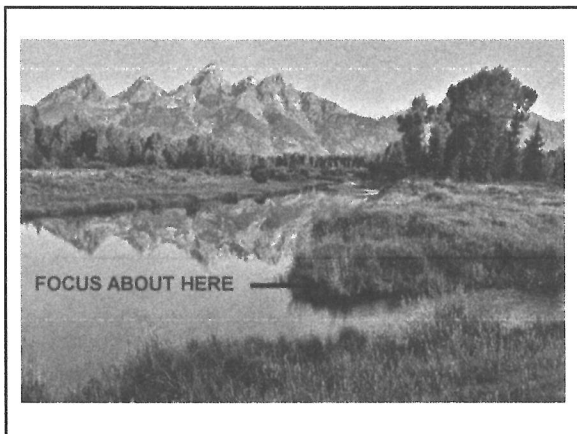
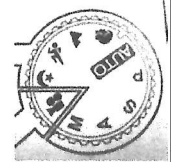


In general,  
the hyperfocal point  
will be about 1/3<sup>rd</sup>  
into the scene



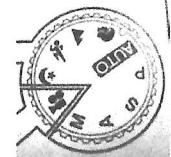
Q. Which is an automatic exposure mode?

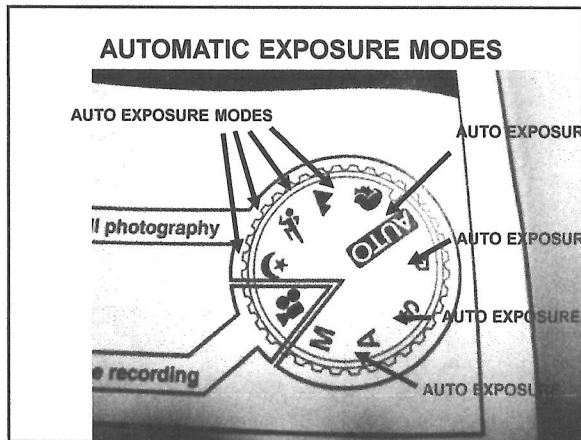
- a. Shutter Priority mode
- b. ISO balance mode
- c. Manual Mode
- d. Exposure Compensation Mode



A. Which is an automatic exposure mode?

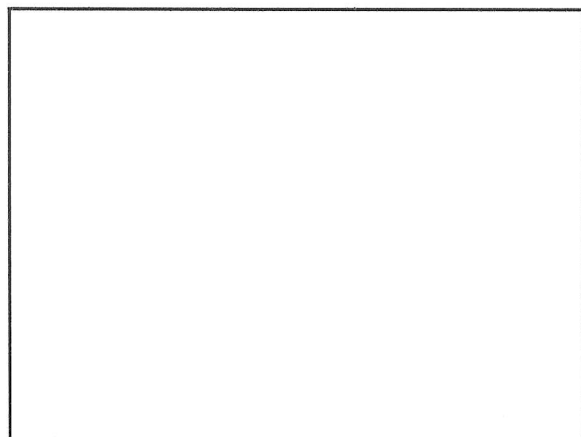
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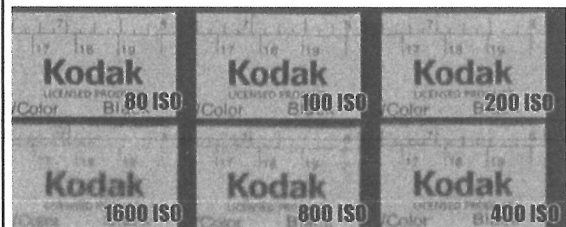
A. What is one major advantage of a “full-sized” sensor ?

- a. lower cost than a “cropped” sensors
- b. less noise at high ISO settings**
- c. less distortion at high lens zooms
- d. more megapixels than smaller sensors



### NOISE vs. ISO

Not on a full sized sensor



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**Q. What is meant by the “speed” of a lens?**

- a. the widest aperture the lens is capable of
- b. how fast the lens can autofocus
- c. the number of shots per second using that lens
- d. the maximum speed of the shutter in the lens

**Q. Which are the “true” f/stops?**

- a. f/4, f/5.6, f/7.1
- b. f/4, f/8, f/9
- c. f/8, f/13, f/16
- d. f/5.6, f/8, f/11

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**The true f/stops**

BIG APERTURE

SMALL APERTURE

f/stops: 1.0 1.4 2.0 2.8 4.0 5.6 8.0 11 16 22 . .

More light comes in

Less light comes in

**EFFECT OF f/stop CHANGES**

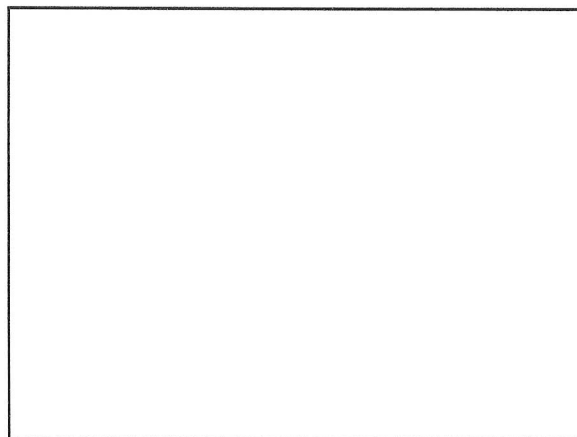
**ONE f/stop CHANGE**  
**DOUBLES OR HALVES THE LIGHT COMING IN**

1 f/stop lower = double the light coming in  
1 f/stop higher = half the light coming in

<small>BIG APERTURE</small>	<small>SMALL APERTURE</small>
f/stops: 1.0 1.4 2.0 2.8 4.0 5.6 8.0 11 16 22 ..	
More light comes in	Less light comes in

**A. What is the effect of increasing aperture by 1 f/stop? (example: f/8 to f/11)**

- a. the light coming in is halved**
- b. the light coming in is doubled**
- c. the light coming in is 1/3 more**
- d. it depends on the ISO setting**



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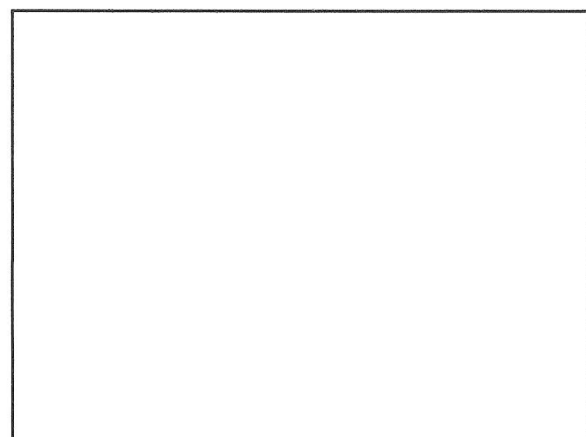
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Q. "f/stop" is a function of:

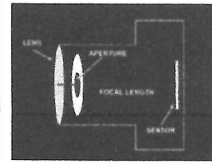
- a. Aperture only
- b. Aperture and shutter speed
- c. focal length and aperture size
- d. Brightness of the light

## f/stop

Focal length divided by aperture diameter

Focal length aperture size

Example:  $100\text{mm} / 50\text{mm} = f/2$



$100\text{mm} / 25\text{mm} = f/2$

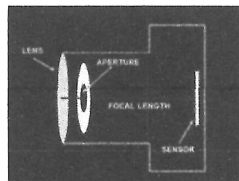
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- b. Aperture and shutter speed
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- d. Brightness of the light

## f/stop

f = focal length (mm)

divided by



stop = diameter of the aperture (mm)

Q. To stop some fast moving action, you increase the shutter speed. How will this affect light coming into the camera?

- a. more light will be let in
- b. less light will be let in
- c. no change in the light let in
- d. more light if at hyperfocal speed

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### **LIGHT ENTERING THE CAMERA**

#### **AFFECTED BY:**

##### **1. SHUTTER SPEED**

Higher speed = less light  
Lower speed = more light

##### **2. APERTURE**

Higher f/stop = less light  
Lower f/stop = more light

**Q. To stop some fast moving action, you increase the shutter speed from 1/400<sup>th</sup> second to 1/800<sup>th</sup> second.**

**To compensate for less light being let in, what change must be made to the f/stop?**

- a. select a higher f/stop
- b. select a lower f/stop**
- c. select a higher f/stop & lower ISO
- d. select a lower f/stop & lower ISO

### **Remembering Exposure Relationships**

#### **OPPOSITE:**

**F/STOP** ----- Opposite (lower f/stop= more light)

**SHUTTER**--- Opposite (slower speed= more light)

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**AFFECTED BY:**

1. SHUTTER SPEED  
Higher speed = less light  
Lower speed = more light
  
2. APERTURE  
Higher f/stop = less light  
Lower f/stop = more light

**A. A “gray” card can be used to:**

- a. Determine if a subject is true gray
- b. Set the camera’s exposure deviation
- c. Reflect gray light onto a subject
- d. Set exposure and white balance

A **GRAY CARD** can be used to:

1. Determine correct shutter speed and aperture
  
2. Set white balance

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**Q. Depth of Field is affected by:**

- a. Aperture, focal length, and distance to subject
- b. Shutter speed, aperture, and ISO
- c. Aperture and focal length
- d. Aperture only

**Q. A low f/stop setting (like f/2.8, f/4.0) will:**

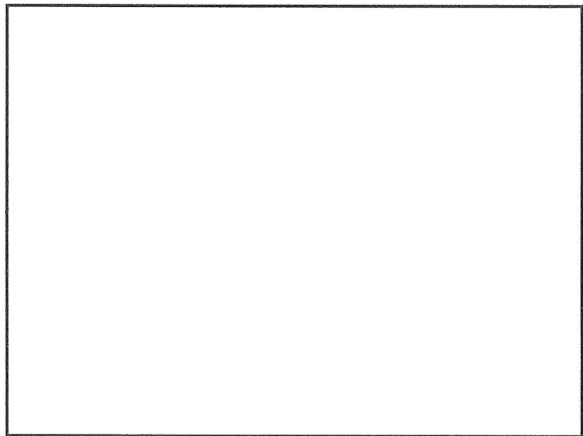
- a. Shorten the Depth of Field
- b. Increase Depth of Field
- c. Make the image brighter without affecting Depth of Field
- d. Reduce Depth of field only if the scene is very bright

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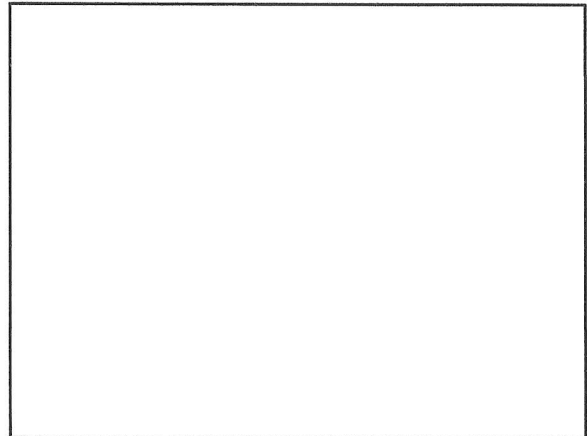
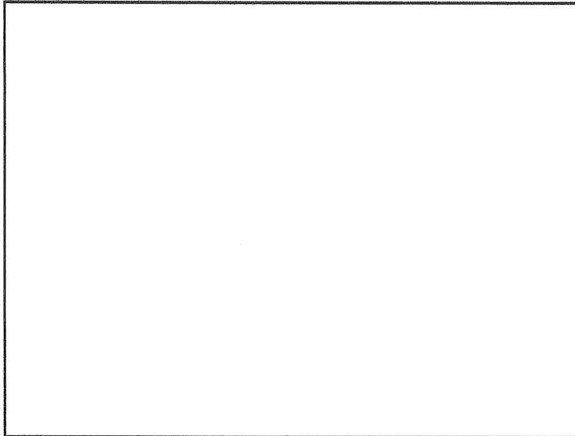
**Aperture vs. Depth of Field**

(Large aperture) Small f/stop number = short Depth of Field  
 (big hole) (f/1.4, f/2.8, f/4.0)



(Small aperture) Large f/stop number = long Depth of Field  
 (small hole) (f/11, f/16, f/22)





**Q. If a subject is in the direct mid-day sun and shutter speed is set to the same as the ISO value, then the f/stop will be:**

- a. f/8
- b. f/16
- c. f/11
- d. f/22

**Q. A subject is being lighted by the direct mid-day sun. If the camera is set to ISO 400, what is a shutter speed and f/stop to get a good exposure.**

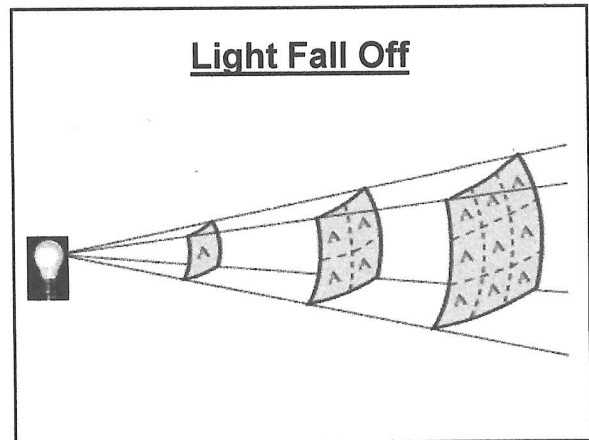
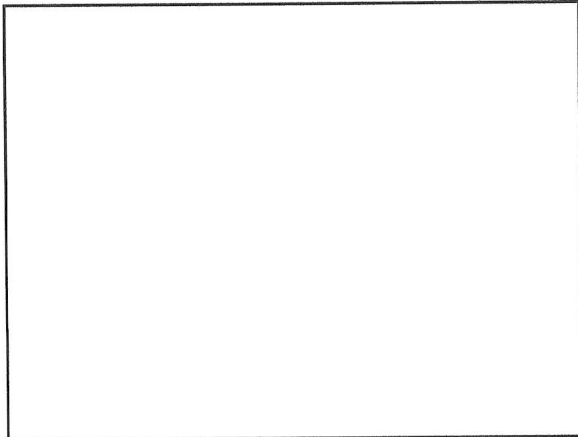
- a. 1/100th and f/8
- b. 1/400th and f/16
- c. 1/200th and f/16
- d. 1/400th and f/22

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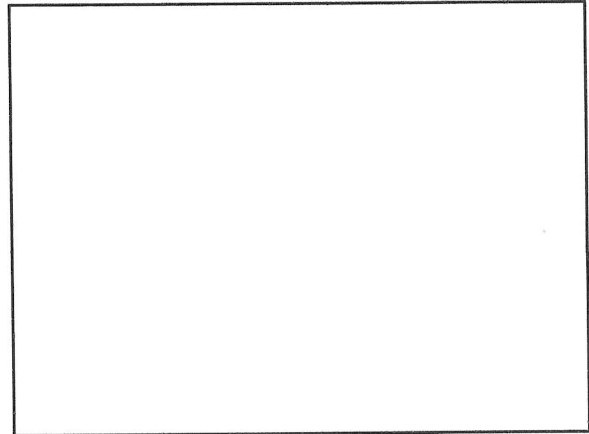
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- b. 1/400th and f/16
- c. 1/200th and f/16
- d. 1/400th and f/22



**Q.** A subject is 4 feet from a light. If the subject moves to 8 feet from the light, the light on the subject will be:

- a. brighter
- b. dimmer
- c. no change in brightness
- d. dependent on the brightness of the light



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**Q.** A subject is 4 feet from a light. If the subject moves to 8 feet from the light:

How MUCH dimmer will the light be on the subject?

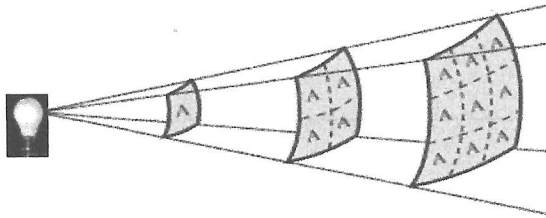
- a. 1/2 as bright
- b. 1/4th as bright
- c. 1/2 as bright, if f/stop isn't changed
- d. 1/4th as bright, only if f/stop is adjusted to compensate

A. A subject is 4 feet from a light. If the subject moves to 8 feet from the light:

How MUCH dimmer will the light be on the subject?

- a. 1/2 as bright
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### Light Fall Off



Q. A subject is being lighted by a source NOT on the camera (the sun, a street light, a photo light, etc). You move the camera closer to the subject to get a tighter shot. The camera's exposure settings:

- a. will have to be changed because the subject will appear brighter to the camera as you get closer.
- b. will have to be changed because the subject will appear dimmer to the camera as you get closer.
- c. will not have to be changed, because it does not matter if you get closer.

### LIGHT FALL OFF

Light spreads out according to  
The Inverse Square Law:

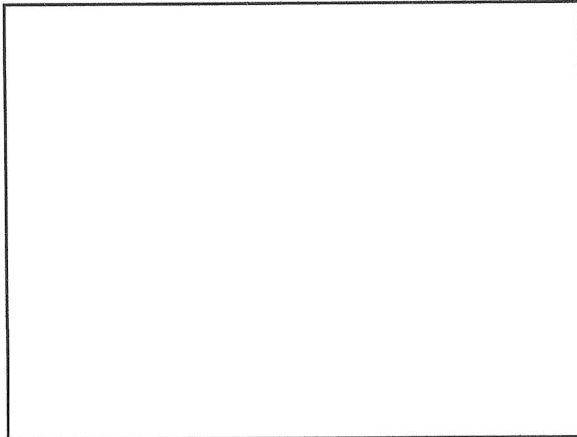
2 times farther away = 1/4<sup>th</sup> the light

3 times farther away = 1/9<sup>th</sup> the light

4 times farther away = 1/16<sup>th</sup> the light

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- a. will have to be changed because the subject will appear brighter to the camera as you get closer.
- b. will have to be changed because the subject will appear dimmer to the camera as you get closer.
- c. will not have to be changed, because it does not matter if you get closer.  
The distance from light to subject did not change!



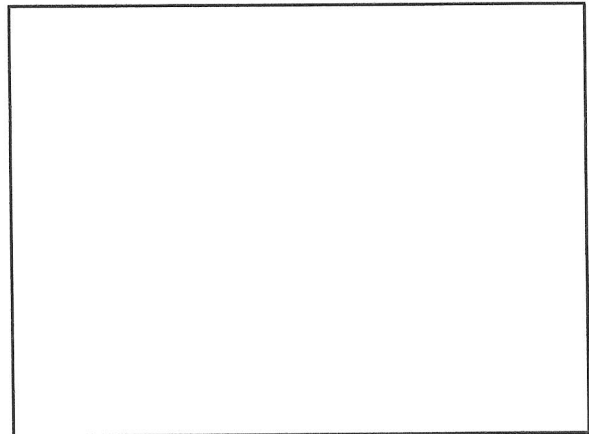
Solution

- 1 f/stop is a halving or doubling of light
- A change from 1/400 to 1/800 reduces the light coming in by half
- ½ change in light = 1 f/stop
- Therefore, select 1 f/stop less aperture to double the light coming in.

**Q. To stop some fast moving action, you double the shutter speed from 1/400<sup>th</sup> second to 1/800<sup>th</sup> second.**

**To compensate for the change , what will the f/stop have to be?**

- a. 2 f/stops higher
- b. 2 f/stops lower
- c. 1 f/stop higher
- d. 1 f/stop lower



**A. To stop some fast moving action, you double the shutter speed from 1/400<sup>th</sup> second to 1/800<sup>th</sup> second.**

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**Q. A camera in Auto Exposure mode will cause a white subject (like snow) to appear:**

- a. Overexposed
- b. Slightly bluish
- c. Underexposed
- d. Overly white

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A practical application of the "Sunny 16" rule

**Q. A subject is in direct mid-day sun. The camera is set to ISO 200, shutter speed 1/200, and aperture at f/16. The exposure is good.**

**To stop some action, you increase the shutter speed to 1/400. What is the correct aperture for a good exposure.**

- a. f/8
- b. f/9
- c. f/11**
- d. f/13

### In-camera light meters

- To expose properly, camera expects a scene of medium gray tone (on average). 
- If the scene is too light in tone, camera will underexpose.



REAL WORLD- brighter than medium gray



RESULTING IMAGE

A practical application of the "Sunny 16" rule

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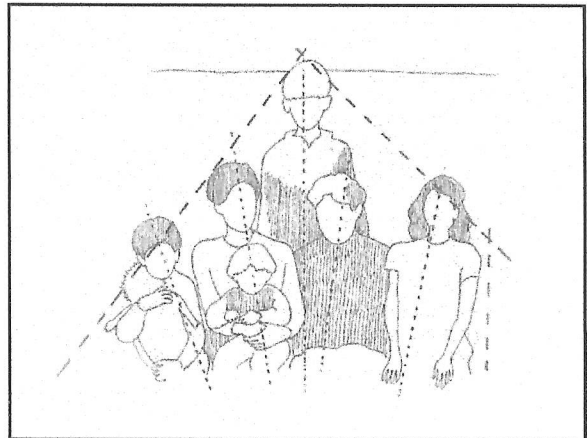
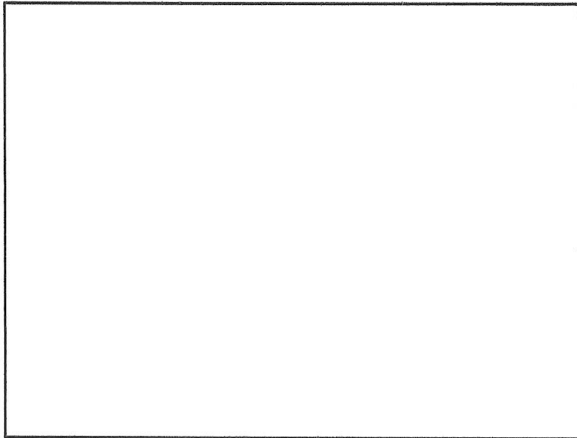
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- a. f/8
- b. f/9
- c. f/11**
- d. f/13

**ISO 200, shutter 1/200, f/16 = good exposure**

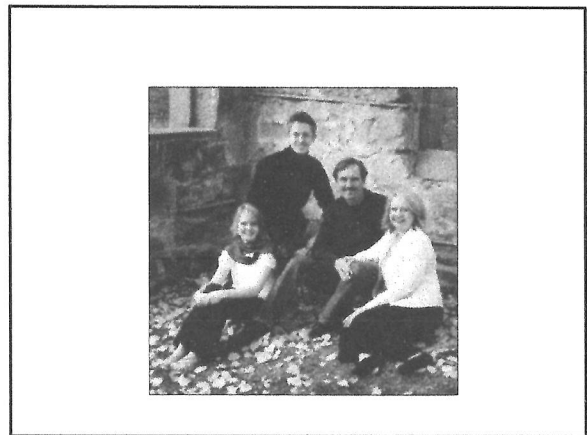
- Double shutter speed to 1/400 =  $\frac{1}{2}$  the light
  - Use 1 f/stop lower = lets in **2X** more light
- (now exposure is good again)

**1 f/stop lower than f/16 is f/11**



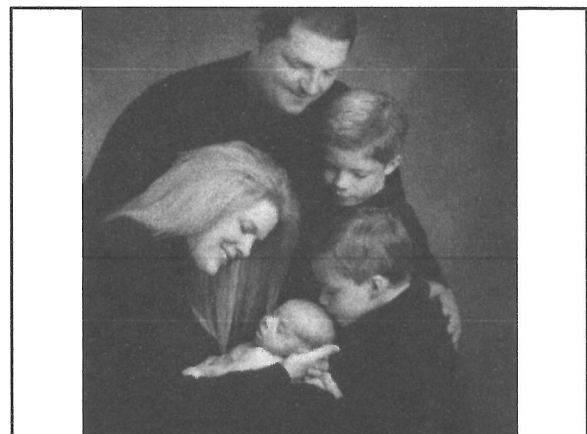
**Q. The best technique when posing several people is to arrange them:**

- a. According to the Rule of Thirds
- b. In rows with the tallest in back
- c. In a photographic “s” curve
- d. In triangles



**A. The best technique when posing several people is to arrange them:**

- a. According to the Rule of Thirds
- b. In rows with the tallest in back
- c. In a photographic “s” curve
- d. In triangles





**Tilting the camera only makes a tilted subject**

**Q. To compose a scene for a “diagonal” presentation:**

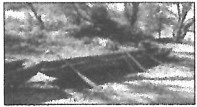
- a. Tilt the camera
- b. Zoom out wider and tilt the camera
- c. Move to one side of the subject
- d. Focus on the far end of the subject

**Creating a Diagonal Composition**

**A. To compose a scene for a “diagonal” presentation:**

- a. Tilt the camera
- b. Zoom out wider and tilt the camera
- c. Move to one side of the subject
- d. Focus on the far end of the subject

To create a diagonal composition:

1. Move to one side 
2. Shoot at an angle to the subject



# FINAL QUESTION

**S-curves are ESSENTIAL in portraits of women**



**Q. Using "S curves" is useful when photographing:**

- a. Women
- b. Men
- c. Men and young women
- d. Elderly men

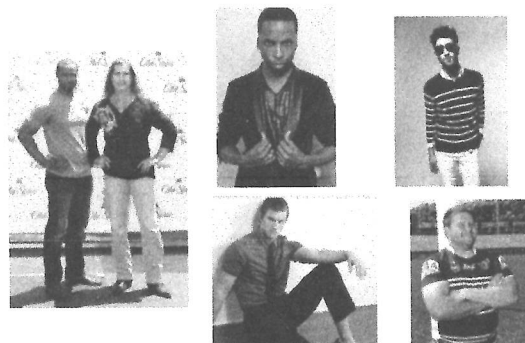
**Without S-curves you get unflattering images**



**A. Using "S curves" is useful when photographing:**

- a. Women
- b. Men
- c. Men and young women
- d. Elderly men

**Men are NOT posed in S-curves**



# The Great Photography Knowledge Quiz

3<sup>rd</sup> edition, Part-2

