

Name: _____

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Chapter 21.3 Homework

Conceptual Physics

Parent Signature: _____

Each numbered question is worth one point unless otherwise noted.

Reviewing Concepts

12. Answer true or false for each of the following sentences. If the sentence is false, correct the word(s) to make the sentence true. (2)

- a. A green object reflects green light.
- b. A blue object absorbs red and yellow light.
- c. A yellow object reflects red light.
- d. A white object absorbs red light.

13. What are the three subtractive primary colors?

14. If colorants (pigment) are added to a can of white paint, what happens to the light we use to view the paint?

15. Why is mixing pigments called *color subtraction*?

16. What colors of light are reflected by the color magenta?

17. In the CMYK color process, why is black pigment used instead of mixing cyan, magenta, and yellow pigments?

18. How does a color printing press produce all the colors of a printed picture?

19. How does a color television screen produce all the colors you see on the screen?

Solving Problems

8. Using what you know about the subtractive color process, fill in the rest of the table. (3)

Subtractive Primary Color	Absorbs	Reflects	
Cyan	Red		
Magenta			
Yellow		Red	Green

10. How would you create the following colors using inks on paper? (2)

- red
- green
- blue
- white

11. If a cloth that appears blue in white light is viewed in a room filled with only blue light, what color will it appear to be? (0.5)

12. Identify the color process—RGB or CMYK—used in each step.

- taking a photograph with a digital camera
- transferring the image to a computer so that the image appears on a computer monitor
- printing the image using a laser printer
- seeing the image on the paper with your eyes

13. Answer the following questions about the absorption graph shown on page 516. (1.5)

- Which colors of light are most strongly absorbed by the plants?
- Which colors of light are reflected the most by plants?
- Based on the information from the absorption graph, explain why a plant will grow more quickly if it is grown in white light rather than green light?