PRACTICE

EXAMPLE 1 on p. 763 for Exs. 1–18

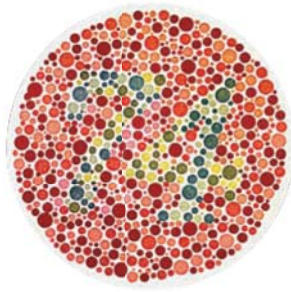
APPROXIMATING BINOMIAL DISTRIBUTIONS **Find the mean and standard deviation of a normal distribution that approximates the binomial distribution with n trials and probability p of success on each trial.**

1. $n = 24$, $p = 0.4$ **2.** $n = 40$, $p = 0.6$ **3.** $n = 46$, $p = 0.3$

4. $n = 55$, $p = 0.15$ **5.** $n = 36$, $p = 0.7$ **6.** $n = 66$, $p = 0.2$

7. $n = 110$, $p = 0.08$ **8.** $n = 125$, $p = 0.35$ **9.** $n = 140$, $p = 0.75$

COLORBLINDNESS **Use the fact that approximately 4% of people are colorblind. Consider a class of 460 students.**



Color vision test

10. What is the probability that 15 or fewer students are colorblind?

11. What is the probability that 12 or more students are colorblind?

12. What is the probability that between 6 and 18 students are colorblind?

LEFT-HANDEDNESS **Use the fact that approximately 9% of people are left-handed. Consider a high school with 1221 students.**

13. What is the probability that at least 140 students are left-handed?

14. What is the probability that at most 100 students are left-handed?

15. What is the probability that between 80 and 130 students are left-handed?

MYOPIA **Use the fact that myopia, or nearsightedness, is a condition that affects approximately 25% of the adult population in the United States. Consider a random sample of 192 U.S. adults.**

16. What is the probability that 42 or more people are nearsighted?

17. What is the probability that 66 or fewer people are nearsighted?

18. What is the probability that between 36 and 60 people are nearsighted?

EXAMPLE 2 on p. 764 for Exs. 19–22

19. SURVEYS A survey that asked people in the United States about their feelings of personal well-being found that 85% are generally happy. To test this finding, you question 26 people at random and find that 19 consider themselves generally happy. Would you reject the survey's findings? *Explain*.

20. CLASS RINGS You read an article that claims only 30% of graduating seniors will buy a class ring. To test this claim, you survey 15 randomly selected seniors in your school and find that 4 are planning to buy a class ring. Should you reject the article's claim? *Explain*.

21. COMPUTERS A manufacturer of personal computers claims that under normal work use only 1% of its computers will fail to operate at some point during a month. A small business uses 40 of the manufacturer's computers under normal work use and has 2 failures in a month. Would you reject the manufacturer's claim? *Explain*.

22. JUICE PREFERENCES A company that makes bottled juices has created a new brand of apple juice. The company claims 80% of people prefer the new apple juice over a competitor's apple juice. A taste test is conducted to test this claim. Of 20 people, 12 prefer the new apple juice. Would you reject the company's claim? *Explain*.