A committee of 6 is to be formed from 10 students and 8 faculty members. Find the probability of each of the following.

15. Exactly 2 students are on the committee.

16. At most 4 students are on the committee.

Jar A contains 4 red and 3 white marbles and Jar B contains 3 red and 2 white marbles. A die is rolled. If the number rolled is greater than 2, a marble is selected from Jar B, otherwise a marble is selected from Jar A.

17. Draw a tree diagram that displays this information.

18. Find the probability that the marble is red.

19. The marble selected is red. Find the probability that the marble came from Jar A.

For a particular game, the probability of winning \$50 is 0.2 and the probability of winning \$10 is 0.6.

20. How much would you expect to win in this game?

21. What would be a fair price to play this game?

MIXED REVIEW

Chapters 1–16

1. a. Copy and complete the table of values below for binomial probabilities with $n = 6$ and $p = 0.4$. Round your answers to the nearest hundredth.

r	0	1	2	3	4	5	6
$p(r) = {}_6C_r(0.4)^r(0.6)^{6-r}$							

b. Graph the points $(r, p(r))$ and connect them with a smooth curve.

2. Repeat Exercise 1, this time with $n = 6$ and $p = 0.5$.

3. Compare and contrast the graphs from Exercises 1 and 2. Consider their slopes, symmetry, maxima, and minima.

4. Find the sum $\sum_{i=1}^{10} \left(\frac{3i}{20}\right)^2$.

Solve these trigonometric equations.

5. $\sin x - \cos^2 x \sin x = -1$

6. $\sin 3x \cos 2x - \cos 3x \sin 2x = 0.5$

7. $2 \sin^2 \frac{1}{2}x = 2 + \cos x$

8. $\cos(45° - \theta) = 3 \cos \theta$

Find the limit of the sequence or state that the limit does not exist.

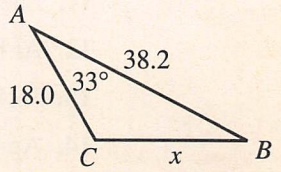
9. $t_n = {}_nC_3, n = 3, 4, 5, \ldots$

10. $t_1 = 100, t_n = \left(\frac{1}{2}t_{n-1} + 20\right)$

11. $t_n = \frac{18}{3^n}, n = 1, 2, 3, \ldots$

12. $t_n = \left(1 + \frac{0.06}{n}\right)^n, n = 1, 2, 3, \ldots$

For Exercises 13 and 14, refer to $\triangle ABC$ at the right.



13. Solve for x.

14. Find the measures of $\angle C$ and $\angle B$ to the nearest tenth of a degree.