

Review of Prerequisite Skills

If you need help with any of the skills listed in purple below, refer to Appendix A.

1. Order of operations Evaluate.

a) $\left(\frac{1}{3}\right)^3 \left(\frac{2}{3}\right)$

b) $\left(\frac{3}{4}\right)^2 \left(\frac{1}{4}\right)$

c) $\left(\frac{2}{5}\right)^2 \left(\frac{3}{5}\right)^2$

d) $1.2\left(\frac{1}{5}\right) + 3.1\left(\frac{2}{5}\right) + 2.4\left(\frac{3}{5}\right) + 4.2\left(\frac{4}{5}\right)$

e) $0.2 + (0.8)(0.2) + (0.8)^2(0.2) + (0.8)^3(0.2)$

2. Sigma notation Write the following in sigma notation.

a) $t_1 + t_2 + \dots + t_{12}$

b) $(0)_9C_0 + (1)_9C_1 + (2)_9C_2 + \dots + (9)_9C_9$

c) $\frac{2}{3} + \frac{3}{4} + \frac{4}{5} + \frac{5}{6} + \frac{6}{7} + \frac{7}{8}$

d) $\frac{a_0 + a_1 + a_2 + a_3 + a_4 + a_5}{6}$

3. Sigma notation Expand and simplify.

a) $\sum_{k=1}^6 k^2$

b) $\sum_{m=1}^{15} b_{m-1}$

c) $\sum_{i=0}^7 {}_7C_i$

d) $\sum_{x=0}^8 (0.3)^x(0.7)$

4. Binomial theorem (section 5.5) Use the binomial theorem to expand and simplify.

a) $(x + y)^6$

b) $(0.4 + 0.6)^4$

c) $\left(\frac{1}{3} + \frac{2}{3}\right)^5$

d) $(p + q)^n$

5. Probability (Chapter 6) When rolling two dice,

a) what is the probability of rolling a sum of 7?

b) what is the probability of rolling a 3 and a 5?

c) what is the probability of rolling a 3 or a 5?

d) what is the probability of rolling a sum of 8?

e) what is the probability of rolling doubles?

6. Probability (Chapter 6) In a family of four children, what is the probability that all four are girls?

7. Probability (Chapter 6) Three people each select a letter of the alphabet.

a) What is the probability that they select the same letter?

b) What is the probability that they select different letters?