

78. The expression $(\frac{1}{6})n(n - 1)(n - 2)$ gives the number of different three-item pizzas that can be created from a list of n toppings.
- Write the expression as a trinomial.
 - If Mario's Pizza offers 12 different toppings, how many different three-item pizzas can be made?
79. A publishing house finds that it sells $1200 - 10x$ copies per week of a new best-seller if it charges x dollars per copy.
- Write an expression for the revenue obtained by charging x dollars per copy.
 - What is the revenue when the publisher charges \$20 per copy?
80. Compuquik sells $800 - 4x$ programmable calculators per month when it charges x dollars per calculator.
- Write an expression for the revenue obtained by charging x dollars per calculator.
 - What is Compuquik's revenue when it charges \$45 for a calculator?
81. A farmer inherits an apple orchard on which 60 trees are planted per acre. Each tree yields 12 bushels of apples. Experimentation has shown that for each additional tree planted per acre, the yield per tree decreases by $\frac{1}{2}$ bushel.
- Write expressions for the number of trees per acre and for the yield per tree if x additional trees are planted per acre.
 - Write a polynomial for the total yield per acre if x additional trees are planted per acre.
 - What is the yield per acre if 10 additional trees are planted per acre? What yield per acre would you expect if 10 trees per acre are removed?
82. An entrepreneur buys a motel with 40 units. The previous owner charged \$24 per night for a room and on the average filled 32 rooms per night at that price. The entrepreneur discovers that for every \$2 he raises the price, another room stands vacant.
- Write expressions for the price of a room and the number of rooms that will be occupied per night if the new owner makes x price increases of \$2 each.
 - Write a polynomial for the total income received from the motel per night if the owner raises the price of a room by $2x$ dollars.
 - What income will the motel generate if the owner charges \$30 for a room? If he charges \$20 for a room, what income would you expect?
83. A small company manufactures radios. When it charges \$20 for a radio, it sells 500 radios per month. For each dollar the price is increased, 15 fewer radios are sold per month.
- Write expressions for the price per radio and the number of radios sold per month if the company raises the price of a radio x dollars.
 - Write a polynomial for the company's total monthly income if it raises the price of a radio by x dollars.
 - What income can the company expect if it charges \$25 for a radio? If it charges \$30?