1. Two interior angles of a triangle are the same. The third angle is four times larger than the other two. Find each angle.

2. You volunteer for an organization and collected three donations worth a total of $200. The biggest donation was four times larger than the smallest and the other was three times larger than the smallest. How much was each donation?

3. Gordie is the youngest in his family. His sister Silvie is three years older. Their cousin Kara is twice as old as Gordie. Altogether they have had 47 birthdays. How old are the three family members?

4. Sam has $140 in five dollar bills and ten dollar bills. She has 3 more tens than fives. How many of each bill does she have?

5. AAA Aardvark House Painting costs $90 per room plus a $150 flat fee.

   (a) What are the dependent and independent variables?
   (b) Write an equation that models the cost of painting a house.
   (c) How much will it cost to paint six rooms?

6. Jagmeet loves reading and has a collection of 38 mystery and science fiction books. Two times the number of mystery books is one more than the number of sci-fi books. How many of each type of book does he have?

7. At a fund-raising car wash for your ski team, you saw a total of 112 vehicles. If there were 26 more cars than SUVs, how many of each type of vehicle did you wash?

8. Your friend's snowboard team had a car wash too. They charged $5 per car, $8 per SUV and made a total of $615 for washing vehicles. How many of each type of vehicle did they wash?

9. Birthday parties at Joe Rockhead's rock climbing gym cost $22 per person plus a $50 rental fee.

   (a) What are the dependent and independent variables?
   (b) Write an equation that models the cost of a party at Joe Rockhead's.
   (c) How much will it cost for a party with 12 people?
   (d) How many people can attend if you have $425 to spend?

10. The school hockey team's three leading scorers are Joni, Suba and Neko. Together they scored 57 goals last season. Joni had 3 more goals than Suba, and Neko had twice as many as Joni. How many goals did each player get?

11. The sum of two numbers is 33. The first number is three more than twice the second number. What are the two numbers?

12. The sum of three consecutive odd integers is 45. What are the integers?

13. Owen's Ski Club costs \$75 to join and each 45 minute lesson is \$60.

    (a) Write an equation that models the cost of taking ski lessons.

    (b) How many lessons can you take if you have \$500?

    (c) If hot chocolate costs \$2.50 at the chalet, how many can you buy after paying for your lessons?

14. This question involves two shapes: An isosceles triangle has two long sides and one short side. The long sides are 1 cm less than twice the short side. A rectangle has a length that is five more than its width.

    (a) If the perimeters of the two shapes are the same, what are the side lengths of the triangle?

    (b) What is the area of the rectangle?

15. The length of a rectangle is 2 cm shorter than three times the width.

    (a) What is the area of the rectangle when the *length* is 14 cm?

    (b) If the perimeter is 52 cm, what is the width?

Answers

1. 30 and 120 degrees.

2. $100, $75 and $25.

3. 11, 14 and 22.

4. 4 fives and 12 tens.

5. (a) Independent is number of rooms n, dependent is total cost of painting C.

   (b) $C = 90n + 150$

   (c) $690.

6. 13 mystery books, 25 sci-fi.

7. 43 SUVs, 69 cars.

8. 35 SUVs, 67 cars.

9. (a) Independent is number of people n, dependent is total cost of party C.

   (b) $C = 22n + 50$

   (c) $314.

   (d) 17 people.

10. Joni 15, Suba 12, Neko 30.

11. 15 and 18.

12. 13, 15 and 17.

13. (a) $C = 60n + 75$, where n is the number of lessons.

    (b) 7 lessons.

    (c) 2 hot chocolates.

14. (a) 12 cm, 23, cm, 23 cm.

    (b) 204 cm^2.

15. (a) 40 cm^2.

    (b) 6 cm.