EXERCISE A

Solve the following linear equations.

1) $5x - 3 = -33$ 2) $4(q - 1) - 3(q + 2) = 25$ 3) $1.8a - 5 = -2.3$

4) $-\dfrac{3}{4}n + 1 = -11$ 5) $7y + 19 = 4y - 12$ 6) $\dfrac{2}{3} + \dfrac{x}{9} = \dfrac{5}{6}$

7) $8p - 15 = 2(5 + 4p)$ 8) $\dfrac{h - 9}{4} = -6$ 9) $z + 11 - 5z = 12 + 3z + 6$

Write an algebraic expression to represent each verbal expression.

10) The sum of 5 and three times a number.   11) Four less than the square of a number.

12) The product of the cube of a number and negative six.   13) Twice the sum of a number and 8.

14) During the 2005 baseball season, Jacque Jones and Matt LeCroy of the Minnesota Twins hit a combined total of 40 home runs. Jones hit 6 more home runs than LeCroy. How many home runs did each player hit? Define a variable, write an equation that represents the information, then solve it.

EXERCISE B

Solve the following linear equations.

15) $-14 - n = -7$ 16) $27 = -9(y + 5) \, 6(y + 8)$ 17) $\dfrac{1}{9} - \dfrac{2b}{3} = \dfrac{1}{18}$

18) $3f - 2 = 4f + 5$ 19) $4(k + 3) + 2 = 4.5(k + 1)$ 20) $4.3n + 1 = 7 - 1.7n$

21) $\dfrac{2}{5}x + \dfrac{3}{7} = 1 - \dfrac{4}{7}x$ 22) $6 + 24r - 22 = 8(-2 + 3r)$ 23) $\dfrac{3v - 1}{5} = 4$

Write an algebraic expression to represent each verbal expression.

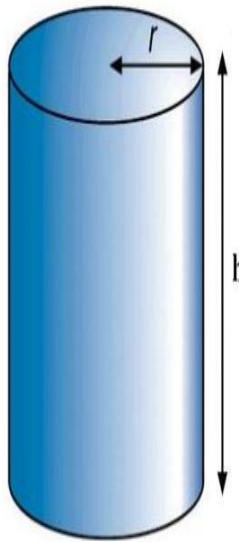24) Four less than the product of seven and a number.

25) Five times the sum of 9 and a number.

26) The square of the quotient of a number and four.

27) The cube of the difference of a number and 7.

EXERCISE C

28) Chun-Wei's mother is 8 more than twice his age older. His father is three years older than his mother. If the three family members have lived a total of 94 years, how old is each person? Make sure to define a variable, write an equation, then solve it.

29) The formula for the surface area of a cylinder with radius r and height h is pi times twice the product of the radius and height plus twice the product of pi and the square of the radius.

a) Write this as an algebraic expression.

b) Rewrite your answer from part a using the distributive property (in reverse). In other words, try to encoporate parenthesis into your answer.

ANSWERS:

1) $x = -6$	9) $z = -1$	17) $b = 1/12$	25) $5(9 + n)$
3) $a = 1.5$	11) $n^2 - 4$	19) $k = 19$	27) $(n - 7)^3$
5) $y = -31/3$	13) $2(n + 8)$	21) $x = 10/11$	29a) $2\pi rh + 2\pi r^2$
7) no solution	15) $n = -7$	23) $v = 7$	29b) $2\pi r(h + r)$