Elementary Solutions - 1.6

1. 8 less than p
   p - 8

3. The product of v and w
   (v)*(w)
   vw

5. 18 less than 8 times q
   18 less than 8q
   8q - 18
   8q - 18

7. The product of 2 more than x and y
   The product of (2 + x) and y
   (2 + x)*(y)
   y(2 + x)

9. The sum of the cubes of w and v
   The sum of w^3 and v^3
   $w^3 + v^3$
   $w^3 + v^3$

11. 20 more than twice z
    20 more than 2z
    20 + 2z
    20 + 2z

13. 7 less than the difference of a and b
    7 less than (a - b)
    (a - b) - 7

15. The product of u **and** the total of c and d
    The product of u and (c + d)
    (u)*(c + d)
    u(c + d)

17. 4 more than a number
    Let x be any number.
    4 + x
    4 + x

19. The ratio of 9 more than k to r
    The ratio of (9 + k) to r

$$\frac{9+k}{r}$$

21. 7 times the product of 5 and a number.
    Let x be any number.
    7 times (5)*(x)
    7*(5x)
    7(5x)

23. 6 minus the sum of a number and 3.
    Let x be any number.
    6 minus (x + 3)
    6 - (x + 3)
    6 - (x + 3)

25. Sixteen multiplied by one-fourth of a number.
Let x be any number.
16 multiplied by one-fourth of x

16 *multiplied by* $\frac{1}{4}x$

$16(\frac{1}{4}x)$

27.
Alice and Joan have a total of 25 coins.
Alice's coins + Joan's coins = 25 coins.
Let Alice have x coins, and Joan have 25 - x coins, then

x + (25 - x) = 25 coins

29. A sailboat travels 4 more hours than a motorboat. If x is the number of hours the motorboat traveled, then x + 4 is the number of hours the sailboat traveled.

31. Don is 8 years older than Timmy.
Let Tim be x years old and Don be x + 8.
If Tim is x years old now, then in 15 years he will be x + 15.
Don is x + 8 years old now, so in 15 years he will be x + 8 + 15.
In 15 years, Timmy will be x + 15 years old and Don will be x + 23 years old.

33. Vicki is twice as old as Chris.
Let Chris be x years old and Vicki be 2x years old.
If Chris is x years old now, then 3 years ago, he was x - 3.
Since Vicki is 2x years old now, then 3 years ago she was 2x - 3.

35. Tina is five years more than twice Becky's age.
Let Becky be x years old,
then Tina is 2x + 5 years old.
If Becky is x years old now, then in 8 years she will be x + 8.
Since Tina is 5 + 2x years old now, then in 8 years she will be (2x + 5) + 8.
So in 8 years, Becky will be x + 8
and Tina will be 2x + 13.

37. Find a variable expression for two odd consecutive integers.
Let x be any odd integer, then x + 1 is the next integer (which is even), so the next odd integer is x + 2.
Therefore, x and x + 2 are two consecutive odd integers.

39. Find a variable expression for four consecutive integers.
Let x be any integer, then x + 1 is the next consecutive integer, and x + 2 is the next, and so on.
So the four consecutive integers are:

x, x + 1, x + 2, x + 3

41. Sally is three times as old as Mary.
If Mary is x years old,
then Sally is 3x years old.

43. Sean is four times as old as Stan.
If Stan is x years old now, then 5 years ago he was x - 5 years old.
Since Sean is 4x years old now,
then 5 years ago he was 4x - 5.

45. Sean is four times as old as Stan.
If Stan is x years old now, in 6 years he will be x + 6. Since Sean is 4x years old now, in 6 years he will be 4x + 6.

47. Barry is one more than two times as old as Nancy.
If Nancy is x years old,
then Barry is 1 + 2x.

49. Barry is one more than two times as old as Nancy.
If Nancy is x years old now,
then 3 years ago, she was x - 3.
Since Barry is 1 + 2x years old now,
then 3 years ago he was (1 + 2x) - 3.
So, 3 years ago Nancy was x - 3,
and Barry was 2x - 2.

51. Let x represent how many pounds there are of almonds at $5.00.

If there are x pounds of almonds, then there are 89 – x pounds of pecans.

Almonds $5.00: x pounds
Pecans $2.00: 89 – x pounds