Estimate.

23. 92% of 104

   SOLUTION:

   Method 1: Use a fraction to estimate.

   92% is about 90% or $\dfrac{9}{10}$. 104 is about 100.

   92% of $104 \approx \dfrac{9}{10} \bullet 100$ or 90

   Method 2: Use 10% to estimate.
   10% of 100 is 10.
   92% is about 9 • 10%.
   9 • 10 = 90
   So, 92% of 104 is about 90.

   ANSWER:

   90; Sample answer: $\dfrac{9}{10}$ • 100 = 90; 0.1 • 100 = 10
   and 9 • 10 = 90

25. 0.9% of 74

   SOLUTION:

   0.9% is nine-tenths of 1%. 74 is about 70.
   1% of $70 = 0.01 \bullet 70$
   $\qquad\qquad = 0.7$
   So, 0.9% of 74 is about 0.7.

   ANSWER:

   0.7; Sample answer: 0.01 • 70 = 0.7

27. You use 43 muscles to frown. When you smile, you use 32% of these same muscles. About how many muscles do you use when you smile?

   SOLUTION:

   Estimate 32% of 43.
   Method 1: Use a fraction to estimate.

   32% is about 30% or $\dfrac{3}{10}$. 43 is about 40.

   32% of $43 \approx \dfrac{3}{10}$ • 40 or 12

   Method 2: Use 10% to estimate.
   10% of 40 is 4.
   32% is about 3 • 10%.
   3 • 4 = 12
   So, 32% of 43 is about 12.
   You use about 12 muscles when you smile.

   ANSWER:

   about 12 muscles; $\dfrac{3}{10}$ • 40 = 12