# PowerScore SAT Free Help Area

# SAT Math

*Medium*

Although based on the same content, SAT math is different than classroom math. Sometimes you have to use logical reasoning to efficiently solve a problem. Try these medium-level difficulty questions.

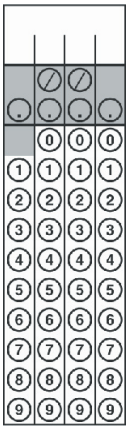
1. If the sum of two numbers is 5 and their difference is 3, what is their product?

   (A) 2
   (B) 4
   (C) 8
   (D) 15
   (E) 34

2. If the average (arithmetic mean) of 5 consecutive odd integers is $3x$, what is the median of these 5 integers?

   (A) $\frac{x}{3}$
   (B) $x - 2$
   (C) $x - 3$
   (D) $3x$
   (E) 3

3. If the perimeter of a rectangle is 8 times the width of the rectangle, the the length of the rectangle is how many times the width?



4. The positive difference between $x$ and $\frac{1}{2}$ is the same as the positive difference between $\frac{1}{3}$ and $\frac{1}{4}$. Which of the following could be the value of $x$?

   (A) $\frac{1}{12}$
   (B) $\frac{7}{12}$
   (C) $\frac{11}{12}$
   (D) 1
   (E) $\frac{3}{2}$

# PowerScore SAT Free Help Area
# SAT Math Solutions

*Medium*

Each of the questions is explained below.

1. If the sum of two numbers is 5 and their difference is 3, what is their product?

(A) 2
(●) 4
(C) 8
(D) 15
(E) 34

Imagine that the two numbers are x and y. Create equations based on the question:

x + y = 5 and x – y = 3

Using one of the equations, solve for a variable:

x – y = 3 » x = 3 + y

Then substitute into the other equation:

x + y = 5
(3 + y) + y = 5
2y + 3 = 5
2y = 2
y = 1 If y = 1, then x = 4 (x + 1 = 5)

The product is (1)(4) = 4

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2. If the average (arithmetic mean) of 5 consecutive odd integers is $3x$, what is the median of these 5 integers?

(A) $\frac{x}{3}$
(B) $x - 2$
(C) $x - 3$
(●) $3x$
(E) 3

When an odd number of consecutive numbers are averaged, the middle number (or median) is always the average:

1, 2, 3, 4, 5 (1+2+3+4+5)/5 = 15/5 = 3

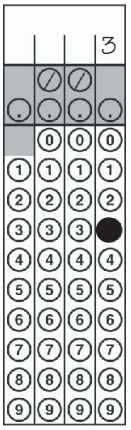
22, 23, 24 (22+23+24)/5 = 69/3 = 23

37, 39, 41, 43, 45 (37+39+41+43+45)/5 = 205/5 = 41

If you did not know this relationship, you can still find the answer. The consecutive odd numbers must be x, x + 2, x + 4, x + 6, and x + 8.

(x + x + 2 + x + 4 + x + 6 + x + 8)/5 = 3x
(5x + 20)/5 = 3x
x + 4 = 3x
The middle number (x+4) equals the average (3x)!

3. If the perimeter of a rectangle is 8 times the width of the rectangle, the the length of the rectangle is how many times the width?




Write basic formulas from the question and from your knowledge of perimeters (L = Length, W = Width):

Perimeter = 8W
Perimeter = L + L + W + W = 2L + 2W

Set the two equations equal:

8W = 2L + 2W
6W = 2L
3W = L

The width is three times the length.

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4. The positive difference between $x$ and $\frac{1}{2}$ is the same as the positive difference between $\frac{1}{3}$ and $\frac{1}{4}$. Which of the following could be the value of $x$?

(A) $\frac{1}{12}$
(●) $\frac{7}{12}$
(C) $\frac{11}{12}$
(D) 1
(E) $\frac{3}{2}$

What is the positive difference between 1/3 and 1/4?

1/3 – 1/4 = 4/12 – 3/12 = 1/12

Now simply create an equation for the positive difference between x and 1/2:

x – 1/2 = 1/12
x = 1/12 + 1/2
x = 1/12 + 6/12 = 7/12