Examrace

SAT Questions and Answers Practice Test Paper-2 Important Questions Section G

Doorsteptutor material for SAT is prepared by world's top subject experts: get questions, notes, tests, video lectures and more- for all subjects of SAT.

Section - G

Time – 20 minutes

13 Questions

1. If $\sqrt{x} + \sqrt{x} = y$ and $2y = 12$, then what does x equal?

Ans.

There is nothing fancy about this problem. Substitute and solve for x.

$$2y = 12$$

$$y = 6$$

$$2\sqrt{x} + \sqrt{x} = y$$

$$2\sqrt{x} + \sqrt{x} = 6$$

$$3\sqrt{x} = 6$$

$$\sqrt{x} = 2$$

$$x = 4$$

2. What is the product of the first even integers?

Ans. This first five even integers are 2, 4,6, 8, and 10. Rev up that calculator start multiplying. The answer is 3,840.

3. Rider High has 400 students. A student will be picked at random from the student body. If the probability that a senior would be picked is three-eighths, how many seniors are there?

Ans.

If the probability that a senior would be picked is three-eighths, then seniors are three-eighths of the entire student body. Since Rider High has 400 students, the equation would be:

$$400 \times \frac{3}{8} = \frac{1200}{8} = 150$$

4. If the area of the striped side of the rectangular solid is 24, what is the volume of the box?
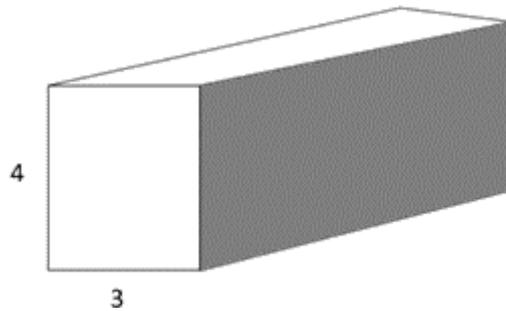
Ans.

The volume of any rectangular solid is the length times the width times the height. The figure tells us the width and the height, and you can determine the length from what you know about the area of the shaded side. Start with the area of a rectangle formula and you can find the length:

$$A = l \times h$$

$$24 = 4 \times l$$

$$6 = l$$

Place this length of 6 into the volume formula for the box:

$$V = l \times h \times w = 3 \times 4 \times 6 = 72$$

5. If the area of a circle is 16π , what is the diameter of the circle?

Ans. First use the area of a circle formula to determine the radius.

$$A = \pi r^2$$

$$16\pi = \pi r^2$$

$$\frac{16\pi}{\pi} = \frac{\pi r^2}{\pi}$$

$$16 = r^2$$

$$4 = r$$

The diameter of a circle is twice the radius, so the diameter is 8.

6. Lisa has three pizza toppings from which to choose: pepperoni, anchovies, and red peppers. If she can choose as many toppings as three and as many zero, how many different pizza orders are possible? (Lisa cannot order the same topping twice.)

Ans. There are some fancier ways to solve this problem, but the surest way is to count up the options. She could have:

1. No toppings.

2. Just a

3. Just p

4. Just r

5. a and p

6. a and r

7. p and r

8. All the toppings.

That is a total of 8. Sure, there's a fancier math way of handling this problem, but since you have the right answer, what does it matter? Is your SAT score in any way determined by whether you used the "fancy method" or not?

7. The average (arithmetic mean) of five numbers is 16. If one number is taken from the set, the new average is 14. What number was taken from the set?

Ans. If x is the sum of the five numbers, you know:

$$\frac{\text{sum}}{\text{number of items}} = \text{Average}$$

$$\frac{x}{5} = 16$$

$$(5)\frac{x}{5} = 16\,(5)$$

$$x = 80$$

Make y the number taken away from the set y. You know that 80 minus y is the new sum, and that the new sum, and that the new average is 14. With this information you can solve for y using the equation:

$$\frac{80 - y}{4} = 14$$
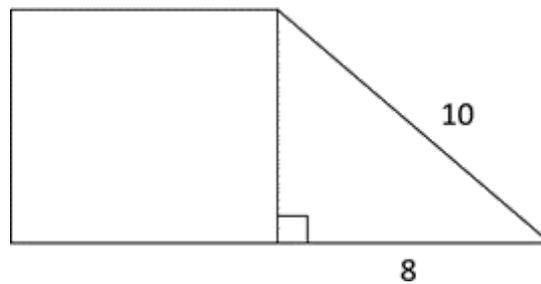
$$(4)\frac{80 - y}{4} = 14\,(4)$$

$$80 - y = 56$$

$$80 - 56 - y = 56 - 56$$

$$24 - y = 0$$

$$24 = y$$

8. If the figure below, is composed of a square and a triangle, what is the area of the square?

Ans. Since the triangle is a right triangle, you can use the Pythagorean theorem to determine the third side of the triangle:

$$c^2 = a^2 + b^2$$

$$100 = 64 + b^2$$

$$36 = b^2$$

$$b = 6$$

If 6 is the length of one side of the square, the area of the square is the square of that, 36.

9. What is the slope a line that is defined by the following two points, $(-1, -2)$ and $(3,1)$?

Ans. You need to remember the right formula for this one. At least you know that since you can't grid in negative numbers, the slope must be positive. Here's the rise over run calculation:

$$\text{Slope} = \frac{\text{rise}}{\text{run}} = \frac{y_1 - y_2}{x_1 - x_2} = \frac{-2 - 1}{-1 - 3} = \frac{-3}{-4} = \frac{3}{4}$$

10. Tom is twelve years older than Susan, and Susan is three times the age of Gina, and Gina is five years younger than Bo. If Bo is 15, how old is Tom? **Ans**. If you work backward from what you know, this problem contains no difficult steps. If Bo is 15 and Gina is five years younger than he, then Gina is 10. And if Gina is 10 and Susan is three times the age of Gina, then Susan is 30. And if Susan is three times the age of Gina, then

Susan is 30. And if Susan is 30 and Tom is twelve years older than Susan, then Tom is 42. there's your answer, 42.

11. For all positive integers, let m $*$ equal the greatest prime divisor of m. What does (15 $*$) (12 $*$) equal?

Ans.

This one tries to intimidate you with a new symbol and a complicated definition. By now, this sort of attempted distraction should not even faze you, as you are well aware that everything you need to know about the new symbol is right in front of you.

The phrase *greatest prime divisor* means the greatest number that is prime and also divides the original number. So the greatest prime divisor of 15 is 5 since no prime numbers greater than 5 evenly divide into 15. As for 12, the greatest prime divisor is 3. This means $\left(15^* \right) \left(12^* \right) = (5)(3) = 15$.

12. What is the sum of the y-intercepts in the below graph?
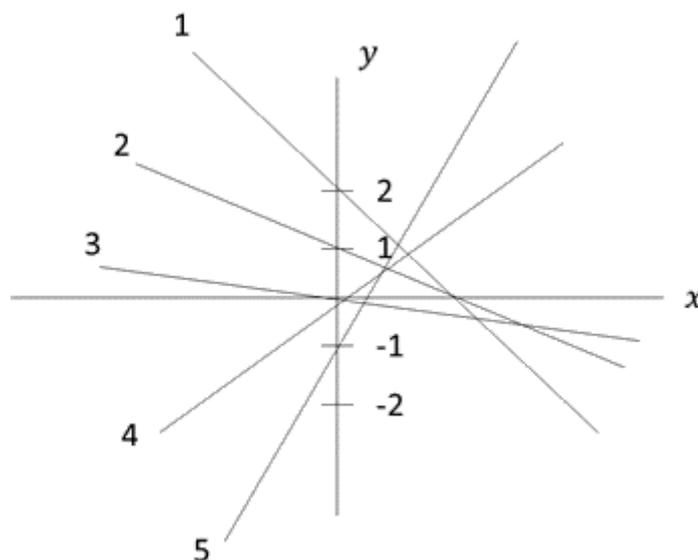
Ans. The graph might look messy, but you only need top pick out the five y -intercepts and them up.

Line 1: at (0,2)

Line 2: at (0,1)

Lines 3 and 4: at (0,0)

Line 5: at (0, -1)

Adding up these five y -values gives you: $2 + 1 + 0 + 0 - 1 = 2$

13. What is the sum of four positive distinct prime numbers is 21. What is the greatest possible value of one of those prime numbers?

Ans. The problem says that the numbers are *distinct*, so none of the four numbers are the same. that's your first clue. Since the sum of the four numbers is 26, the numbers in the sum must be less than 21. Here's a Rogue's Gallery list of all the less prime numbers: 2, 3, 5, 7, 11,13, 17, and 19. To find the greatest possible integer in the set, first make all the other integers as possible. The set could be 2,3, 5, x . This would maximize x . Now solve:

$2 + 3 + 5 + x = 21$

$10 + x = 21$

$10 - 10 + x = 21 - 10$

$x = 11$, also prime.

11 must be the answer.

Developed by: Mindsprite Solutions