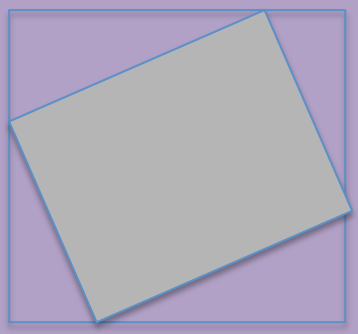
NEW DS QUESTIONS FROM OG REVIEW 2017



PAGE 155, Q184

In the quilting pattern shown above, a small square has its vertices on the sides of a larger square. What is the side length, in centimeters, of the larger square?

1) **The side length of the smaller square is 10 cm.**
2) **Each vertex of the small square cuts 1 side of the larger square into 2 segments with lengths in the ratio of 1:2.**

PAGE 155, Q185

Did insurance company K have more than $300 million in total net profits last year?

1) **Last year Company K paid out $0.95 in claims for every dollar of premium collected.**
2) **Last year Company K earned a total of $150 million in profits from the investment of accumulated surplus premiums for previous years.**

PAGE 155, Q186

How many hours would it take Pump A and Pump B working together, each at its own constant rate, to empty a tank that was initially full?

1) **Working alone at its constant rate, Pump A would empty the full tank in 4 hours 20 minutes**
2) **Working alone, Pump B would empty the full tank at its constant rate of 72 liters per minute.**

PAGE 156, Q189

On the scale drawing of a certain house plan, if 1 centimeter represents *x* meters, what is the value of *x*?

1) **A rectangular room that has a floor area of 12 square meters is represented by a region of area 48 square centimeters.**
2) **The 15-meter length of the house is represented by a segment 30 centimeters long.**

PAGE 156, Q194

Is the positive integer *n* odd?

1) $n^2 + (n + 1)^2 + (n + 2)^2$ **is even**
2) $n^2 - (n + 1)^2 - (n + 2)^2$ **is even**

PAGE 156, Q199

If *x* and *y* are positive, is *xy* > *x* + *y*?

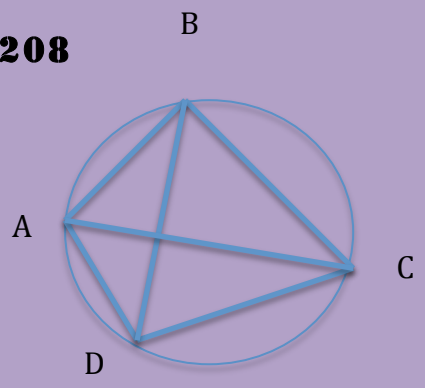
1) ***x* < *y***
2) ***2* < *x***

PAGE 157, Q202

A candle company determines that, for a certain specialty candle, the supply function is $p = m_1x + b_1$ and the demand function is $p = m_2x + b_2$, where p is the price of each candle, x is the number of candles supplied or demanded, and m_1, m_2, b_1, and b_2 are constants. At what value of *x* do the graphs of the supply function and demand function intersect?

1) $m_1 = -m_2 = 0.005$
2) $b_2 - b_1 = 6$

PAGE 157, Q208



In the figure shown, quadrilateral ABCD is inscribed in a circle of radius 5. What is the perimeter of quadrilateral ABCD?

1) **The length of AB is 6 and the length of CD is 8.**
2) **AC is a diameter of the circle.**

PAGE 157, Q211

Is the median of the five numbers *a*, *b*, *c*, *d*, and *e* equal to *d*?

1) a < c < e
2) b < d < c

PAGE 158, Q218

Is the integer *n* a prime number?

1) $24 \leq n \leq 28$
2) *n* is not divisible by 2 or 3

PAGE 158, Q222

In a certain order, the pretax price of each regular pencil was $0.03, the pretax price of each deluxe pencil was $0.05, and there were 50% more deluxe pencils than regular pencils. All taxes on the order are a fixed percent of the pretax prices. The sum of the total pretax price of the order and the tax on the order was $44.10. What was the amount, in dollars, of the tax on the order?

1) The tax on the order was 5% of the total pretax price of the order.
2) The order contained exactly 400 regular pencils.

PAGE 158, Q225

Which of the positive numbers *x* or *y* is greater?

1) **y = 2x**
2) **2x + 5y = 12**

PAGE 159, Q230

If $y = x^2 - 6x + 9$, what is the value of x?

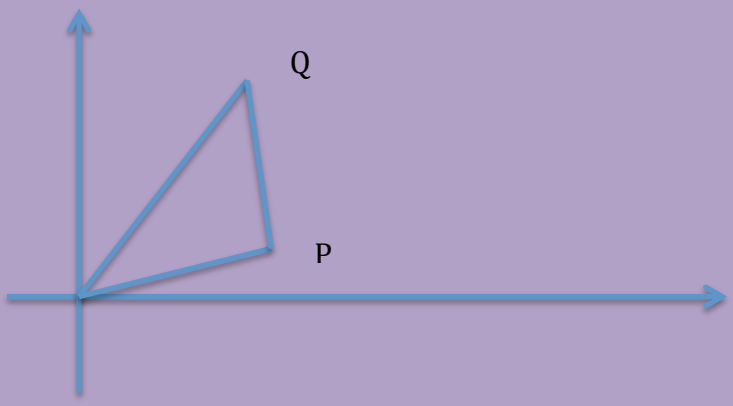
1) **y = 0**
2) **x + y = 3**

PAGE 159, Q236

Each Type A machine fills 400 cans per minute, each Type B machine fills 600 cans per minute, and each Type C machine installs 2,400 lids per minute. A lid is installed on each can that is filled and on no can that is not filled. For a particular minute, what is the total number of machines working?

1) **A total of 4,800 cans are filled that minute.**
2) **For that minute, there are 2 Type B machines working for every Type C machine working.**

PAGE 161, Q262



In the figure above, line segment OP has slope $\frac{1}{2}$ and line segment PQ has a slope 2. What is the slope of line segment OQ?

1) Line segment OP has length $2\sqrt{5}$
2) The coordinates of point Q are (5, 4)

PAGE 164, Q293

In the xy-plane, lines *k* and *l* intersect at the point (1, 1). Is the *y*-intercept of *k* greater than the *y*-intercept of *l*?

1) The slope of *k* is less than the slope of *l*.
2) The slope of *l* is positive.

PAGE 282, Q 310

If *a* and *b* are positive integers, is $\sqrt[3]{ab}$ an integer?

1) $\sqrt{a}$ is an integer
2) b = $\sqrt{a}$

PAGE 282, Q 315

Three dice, each of which has its 6 sides numbered 1 through 6, are tossed. The sum of the 3 numbers that are facing up is 12. Is at least 1 of these numbers 5?

1) None of the 3 numbers that are facing up is divisible by 3
2) Of the numbers that are facing up, 2, but not all 3, are equal

PAGE 282, Q 316

On the number line, point R has coordinate *r* and point T has coordinate *t*. Is *t* < 0?

1) -1 < *r* < 0
2) The distance between R and T is equal to r^2

PAGE 283, Q 325

Jazz and blues recordings accounted for 6 percent of the $840 million revenue from the sales of recordings in Country Y in 2000. What was the revenue from the sales of jazz and blues recordings in Country Y in 1998?

1) Jazz and blues recordings accounted for 5 percent of the revenue from the sales of recordings in Country Y in 1998
2) The revenue from the sales of jazz and blues recordings in Country Y increased by 40 percent from 1998 to 2000

PAGE 283, Q 327

If *x* is a positive integer, what is the value of $\sqrt{x + 24} - \sqrt{x}$?

1) $\sqrt{x}$ is an integer
2) $\sqrt{x + 24}$ is an integer

PAGE 284, Q 332

A group consisting of several families visited an amusement park where the regular admission fees were ¥5,500 for each adult and ¥4,800 for each child. Because there were at least 10 people in the group, each paid an admission fee that was 10% less that the regular admission fee. How many children were in the group?

1) **The total of the admission fees paid for the adults in the group was ¥29,700**
2) **The total of the admission fees paid for the children in the group was ¥4,860 more than the total of the admission fees paid for the adults in the group.**

PAGE 286, Q 347

If x is a positive integer, then is x prime?

1) **$3x + 1$ is prime**
2) **$5x + 1$ is prime**

PAGE 287, Q 359

The only articles of clothing in a certain closet are shirts, dresses, and jackets. The ratio of the number of shirts to the number of dresses to the number of jackets in the closet is 9:4:5, respectively. If there are more than 7 dresses in the closet, what is the total number of articles of clothing in the closet?

1) **The total number of shirts and jackets in the closet is less than 30**
2) **The total number of shirts and dresses in the closet is 26**