5.2 The Directions

These directions are similar to those you will see for data sufficiency questions when you take the GMAT exam. If you read the directions carefully and understand them clearly before going to sit for the test, you will not need to spend much time reviewing them when you take the GMAT exam.

Each data sufficiency problem consists of a question and two statements, labeled (1) and (2), that give data. You have to decide whether the data given in the statements are *sufficient* for answering the question. Using the data given in the statements *plus* your knowledge of mathematics and everyday facts (such as the number of days in July or the meaning of *counterclockwise*), you must indicate whether the data given in the statements are sufficient for answering the questions and then indicate one of the following answer choices:

- (A)   Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient to answer the question asked;

- (B)   Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient to answer the question asked;

- (C)   BOTH statements (1) and (2) TOGETHER are sufficient to answer the question asked, but NEITHER statement ALONE is sufficient;

- (D)   EACH statement ALONE is sufficient to answer the question asked;

- (E)   Statements (1) and (2) TOGETHER are NOT sufficient to answer the question asked, and additional data are needed.

NOTE: In data sufficiency problems that ask for the value of a quantity, the data given in the statements are sufficient only when it is possible to determine exactly one numerical value for the quantity.

Numbers: All numbers used are real numbers.

Figures: A figure accompanying a data sufficiency problem will conform to the information given in the question but will not necessarily conform to the additional information given in statements (1) and (2).

Lines shown as straight can be assumed to be straight and lines that appear jagged can also be assumed to be straight.

You may assume that the positions of points, angles, regions, and so forth exist in the order shown and that angle measures are greater than zero degrees.

All figures lie in a plane unless otherwise indicated.

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5.3 Sample Questions

Each <u>data sufficiency</u> problem consists of a question and two statements, labeled (1) and (2), which contain certain data. Using these data and your knowledge of mathematics and everyday facts (such as the number of days in July or the meaning of the word *counterclockwise*), decide whether the data given are sufficient for answering the question and then indicate one of the following answer choices:

A   Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.
B   Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.
C   BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.
D   EACH statement ALONE is sufficient.
E   Statements (1) and (2) TOGETHER are not sufficient.

<u>Note:</u> In data sufficiency problems that ask for the value of a quantity, the data given in the statements are sufficient only when it is possible to determine exactly one numerical value for the quantity.

<u>Example:</u>
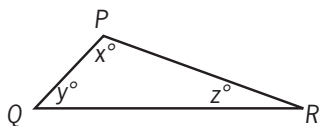
In $\triangle PQR$, what is the value of x ?

(1) $PQ = PR$

(2) $y = 40$

Explanation: According to statement (1) $PQ = PR$; therefore, $\triangle PQR$ is isosceles and $y = z$. Since $x + y + z = 180$, it follows that $x + 2y = 180$. Since statement (1) does not give a value for y, you cannot answer the question using statement (1) alone. According to statement (2), $y = 40$; therefore, $x + z = 140$. Since statement (2) does not give a value for z, you cannot answer the question using statement (2) alone. Using both statements together, since $x + 2y = 180$ and the value of y is given, you can find the value of x. Therefore, BOTH statements (1) and (2) TOGETHER are sufficient to answer the questions, but NEITHER statement ALONE is sufficient.

<u>Numbers:</u> All numbers used are real numbers.

<u>Figures:</u>
- Figures conform to the information given in the question, but will not necessarily conform to the additional information given in statements (1) and (2).
- Lines shown as straight are straight, and lines that appear jagged are also straight.
- The positions of points, angles, regions, etc., exist in the order shown, and angle measures are greater than zero.
- All figures lie in a plane unless otherwise indicated.

177. What is the tenths digit of the number d when it is written as a decimal?

    (1) $d = \dfrac{54}{25}$

    (2) $1,000d = 2,160$

6 in
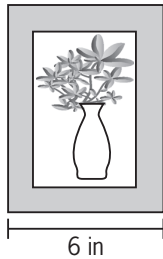
178. A framed picture is shown above. The frame, shown shaded, is 6 inches wide and forms a border of uniform width around the picture. What are the dimensions of the viewable portion of the picture?

    (1) The area of the shaded region is 24 square inches.

    (2) The frame is 8 inches tall.

179. What is the value of the integer x?

    (1) x rounded to the nearest hundred is 7,200.

    (2) The hundreds digit of x is 2.

180. Is $2x > 2y$?

    (1) $x > y$

    (2) $3x > 3y$

181. If p and q are positive, is $\dfrac{p}{q}$ less than 1?

    (1) p is less than 4.

    (2) q is less than 4.

182. In a certain factory, hours worked by each employee in excess of 40 hours per week are overtime hours and are paid for at $1\frac{1}{2}$ times the employee's regular hourly pay rate. If an employee worked a total of 42 hours last week, how much was the employee's gross pay for the hours worked last week?

    (1) The employee's gross pay for overtime hours worked last week was $30.

    (2) The employee's gross pay for all hours worked last week was $30 more than for the previous week.

183. If $x > 0$, what is the value of x^5?

    (1) $\sqrt{x} = 32$

    (2) $x^2 = 2^{20}$
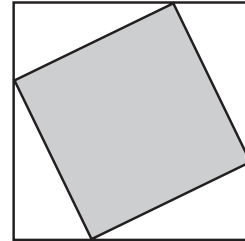
184. In the quilting pattern shown above, a small square has its vertices on the sides of a larger square. What is the side length, in centimeters, of the larger square?

    (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.

185. 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 premiums collected.

    (2) Last year Company K earned a total of $150 million in profits from the investment of accumulated surplus premiums from previous years.

186. 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.

187. What is the value of the integer N?
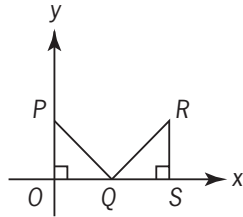
    (1) $101 < N < 103$

    (2) $202 < 2N < 206$

188. Is zw positive?

    (1) $z + w^3 = 20$

    (2) z is positive.

189. 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.

190. In the rectangular coordinate system above, if $\triangle OPQ$ and $\triangle QRS$ have equal area, what are the coordinates of point R ?

   (1) The coordinates of point P are (0,12).
   (2) $OP = OQ$ and $QS = RS$.

191. If y is greater than 110 percent of x, is y greater than 75 ?

   (1) $x > 75$
   (2) $y - x = 10$

192. What is the average (arithmetic mean) of x and y ?

   (1) The average of x and $2y$ is 10.
   (2) The average of $2x$ and $7y$ is 32.

193. What is the value of $\dfrac{r}{2} + \dfrac{s}{2}$?

   (1) $\dfrac{r + s}{2} = 5$
   (2) $r + s = 10$

194. 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.

195. For all x, the expression x^* is defined to be $ax + a$, where a is a constant. What is the value of 2^* ?

   (1) $3^* = 2$
   (2) $5^* = 3$

196. Is $k + m < 0$?

   (1) $k < 0$
   (2) $km > 0$

197. A retailer purchased a television set for x percent less than its list price, and then sold it for y percent less than its list price. What was the list price of the television set?

   (1) $x = 15$
   (2) $x - y = 5$

198. If Ann saves x dollars each week and Beth saves y dollars each week, what is the total amount that they save per week?

   (1) Beth saves \$5 more per week than Ann saves per week.
   (2) It takes Ann 6 weeks to save the same amount that Beth saves in 5 weeks.

199. If x and y are positive, is $xy > x + y$?

   (1) $x < y$
   (2) $2 < x$

200. What is the ratio of c to d ?

   (1) The ratio of $3c$ to $3d$ is 3 to 4.
   (2) The ratio of $c + 3$ to $d + 3$ is 4 to 5.

201. A certain dealership has a number of cars to be sold by its salespeople. How many cars are to be sold?

   (1) If each of the salespeople sells 4 of the cars, 23 cars will remain unsold.
   (2) If each of the salespeople sells 6 of the cars, 5 cars will remain unsold.

202. A candle company determines that, for a certain specialty candle, the supply function is $p = m_1 x + b_1$ and the demand function is $p = m_2 x + b_2$, 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) $b_2 - b_1 = 6$

203. Some computers at a certain company are Brand X and the rest are Brand Y. If the ratio of the number of Brand Y computers to the number of Brand X computers at the company is 5 to 6, how many of the computers are Brand Y ?

    (1) There are 80 more Brand X computers than Brand Y computers at the company.
    (2) There is a total of 880 computers at the company.
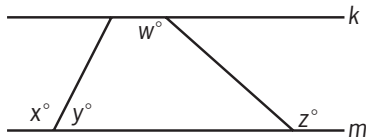
204. In the figure shown, lines k and m are parallel to each other. Is $x = z$?

    (1) $x = w$
    (2) $y = 180 - w$

205. When the wind speed is 9 miles per hour, the wind-chill factor w is given by

$$w = -17.366 + 1.19t,$$

where t is the temperature in degrees Fahrenheit. If at noon yesterday the wind speed was 9 miles per hour, was the wind-chill factor greater than 0 ?

    (1) The temperature at noon yesterday was greater than 10 degrees Fahrenheit.
    (2) The temperature at noon yesterday was less than 20 degrees Fahrenheit.
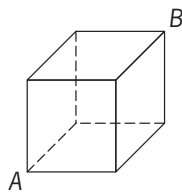

206. What is the volume of the cube above?

    (1) The surface area of the cube is 600 square inches.
    (2) The length of diagonal AB is $10\sqrt{3}$ inches.

207. Of the 230 single-family homes built in City X last year, how many were occupied at the end of the year?

    (1) Of all single-family homes in City X, 90 percent were occupied at the end of last year.
    (2) A total of 7,200 single-family homes in City X were occupied at the end of last year.
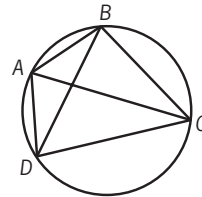
208. In the figure shown, quadrilateral $ABCD$ is inscribed in a circle of radius 5. What is the perimeter of quadrilateral $ABCD$?

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

209. If J, S, and V are points on the number line, what is the distance between S and V ?

    (1) The distance between J and S is 20.
    (2) The distance between J and V is 25.

210. If x is a positive integer, what is the value of x ?

    (1) $x^2 = \sqrt{x}$
    (2) $\dfrac{n}{x} = n$ and $n \neq 0$.

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

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

212. During a certain bicycle ride, was Sherry's average speed faster than 24 kilometers per hour? (1 kilometer = 1,000 meters)

    (1) Sherry's average speed during the bicycle ride was faster than 7 meters per second.
    (2) Sherry's average speed during the bicycle ride was slower than 8 meters per second.

213. If x and y are integers, what is the value of x ?

    (1) $xy = 1$

    (2) $x \neq -1$

214. If p, s, and t are positive, is $|ps - pt| > p(s - t)$?

    (1) $p < s$

    (2) $s < t$

215. The total cost of an office dinner was shared equally by k of the n employees who attended the dinner. What was the total cost of the dinner?

    (1)   Each of the k employees who shared the cost of the dinner paid $19.

    (2)   If the total cost of the dinner had been shared equally by $k + 1$ of the n employees who attended the dinner, each of the $k + 1$ employees would have paid $18.

216. For a recent play performance, the ticket prices were $25 per adult and $15 per child. A total of 500 tickets were sold for the performance. How many of the tickets sold were for adults?

    (1)   Revenue from ticket sales for this performance totaled $10,500.

    (2)   The average (arithmetic mean) price per ticket sold was $21.

217. What is the value of x ?

    (1) $x + 1 = 2 - 3x$

    (2) $\dfrac{1}{2x} = 2$

218. Is the integer n a prime number?

    (1) $24 \leq n \leq 28$

    (2) n is not divisible by 2 or 3.

219. What is the sum of the first four terms of sequence S ?

    (1)   After the first two terms of S, the value of each term of S is equal to the average (arithmetic mean) of the last two preceding terms.

    (2)   The average (arithmetic mean) of the first three terms of S is 10.

220. If x and y are positive integers, what is the remainder when $10^x + y$ is divided by 3 ?

    (1) $x = 5$

    (2) $y = 2$

221. What was the amount of money donated to a certain charity?

    (1)   Of the amount donated, 40 percent came from corporate donations.

    (2)   Of the amount donated, $1.5 million came from noncorporate donations.

222. 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.

223. What is the value of the positive integer n ?

    (1) $n^4 < 25$

    (2) $n \neq n^2$

224. If the set S consists of five consecutive positive integers, what is the sum of these five integers?

    (1)   The integer 11 is in S, but 10 is not in S.

    (2)   The sum of the even integers in S is 26.

225. Which of the positive numbers x or y is greater?

    (1) $y = 2x$

    (2) $2x + 5y = 12$

226. A total of 20 amounts are entered on a spreadsheet that has 5 rows and 4 columns; each of the 20 positions in the spreadsheet contains one amount. The average (arithmetic mean) of the amounts in row i is R_i ($1 \leq i \leq 5$). The average of the amounts in column j is C_j ($1 \leq j \leq 4$). What is the average of all 20 amounts on the spreadsheet?

    (1) $R_1 + R_2 + R_3 + R_4 + R_5 = 550$
   (2) $C_1 + C_2 + C_3 + C_4 = 440$

227. Was the range of the amounts of money that Company Y budgeted for its projects last year equal to the range of the amounts of money that it budgeted for its projects this year?

    (1) Both last year and this year, Company Y budgeted money for 12 projects and the least amount of money that it budgeted for a project was $400.
    (2) Both last year and this year, the average (arithmetic mean) amount of money that Company Y budgeted per project was $2,000.
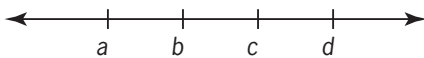
228. If a, b, c, and d are numbers on the number line shown and if the tick marks are equally spaced, what is the value of $a + c$?

    (1) $a + b = -8$
    (2) $a + d = 0$
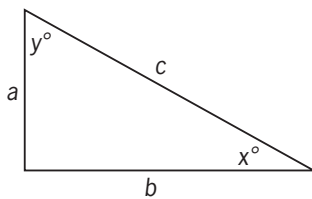
229. In the triangle above, does $a^2 + b^2 = c^2$?

    (1) $x + y = 90$
    (2) $x = y$

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

    (1) $y = 0$
    (2) $x + y = 3$

231. If $rs \neq 0$, is $\dfrac{1}{r} + \dfrac{1}{s} = 4$?

    (1) $r + s = 4rs$
    (2) $r = s$

232. If x, y, and z are three integers, are they consecutive integers?

    (1) $z - x = 2$
    (2) $x < y < z$

233. A collection of 36 cards consists of 4 sets of 9 cards each. The 9 cards in each set are numbered 1 through 9. If one card has been removed from the collection, what is the number on that card?

    (1) The units digit of the sum of the numbers on the remaining 35 cards is 6.
    (2) The sum of the numbers on the remaining 35 cards is 176.

234. In the xy-plane, point (r,s) lies on a circle with center at the origin. What is the value of $r^2 + s^2$?

    (1) The circle has radius 2.
    (2) The point $\left(\sqrt{2}, -\sqrt{2}\right)$ lies on the circle.

235. If r, s, and t are nonzero integers, is $r^5 s^3 t^4$ negative?

    (1) rt is negative.
    (2) s is negative.

236. 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.

237. If x and y are integers, what is the value of y ?

    (1) $xy = 27$
    (2) $x = y^2$

238. John took a test that had 60 questions numbered from 1 to 60. How many of the questions did he answer correctly?

    (1)   The number of questions he answered correctly in the first half of the test was 7 more than the number he answered correctly in the second half of the test.

    (2)   He answered $\frac{5}{6}$ of the odd-numbered questions correctly and $\frac{4}{5}$ of the even-numbered questions correctly.

239. If x is a positive integer, is $\sqrt{x}$ an integer?

    (1) $\sqrt{4x}$ is an integer.

    (2) $\sqrt{3x}$ is not an integer.

240. Last year, if Elena spent a total of $720 on newspapers, magazines, and books, what amount did she spend on newspapers?

    (1)   Last year, the amount that Elena spent on magazines was 80 percent of the amount that she spent on books.

    (2)   Last year, the amount that Elena spent on newspapers was 60 percent of the total amount that she spent on magazines and books.

241. If p, q, x, y, and z are different positive integers, which of the five integers is the median?

    (1) $p + x < q$

    (2) $y < z$

242. If $w + z = 28$, what is the value of wz ?

    (1) w and z are positive integers.

    (2) w and z are consecutive odd integers.

243. What is the value of $a - b$?

    (1) $a = b + 4$

    (2) $(a - b)^2 = 16$

244. Can the positive integer p be expressed as the product of two integers, each of which is greater than 1 ?

    (1) $31 < p < 37$

    (2) p is odd.

245. If $abc \neq 0$, is $\dfrac{\frac{a}{b}}{c} = \dfrac{a}{\frac{b}{c}}$?

    (1) $a = 1$

    (2) $c = 1$

246. A certain list consists of 400 different numbers. Is the average (arithmetic mean) of the numbers in the list greater than the median of the numbers in the list?

    (1)   Of the numbers in the list, 280 are less than the average.

    (2)   Of the numbers in the list, 30 percent are greater than or equal to the average.

247. What is the area of rectangular region R ?

    (1)   Each diagonal of R has length 5.

    (2)   The perimeter of R is 14.

248. If Q is an integer between 10 and 100, what is the value of Q ?

    (1)   One of Q's digits is 3 more than the other, and the sum of its digits is 9.

    (2) $Q < 50$

249. If p and q are positive integers and $pq = 24$, what is the value of p ?

    (1) $\frac{q}{6}$ is an integer.

    (2) $\frac{p}{2}$ is an integer.

250. How many integers n are there such that $r < n < s$?

    (1) $s - r = 5$

    (2) r and s are not integers.

251. If the total price of n equally priced shares of a certain stock was $12,000, what was the price per share of the stock?

    (1)   If the price per share of the stock had been $1 more, the total price of the n shares would have been $300 more.

    (2)   If the price per share of the stock had been $2 less, the total price of the n shares would have been 5 percent less.

252. If n is positive, is $\sqrt{n} > 100$?

   (1) $\sqrt{n-1} > 99$

   (2) $\sqrt{n+1} > 101$

253. Is $xy > 5$?

   (1) $1 \le x \le 3$ and $2 \le y \le 4$.

   (2) $x + y = 5$

254. In Year X, 8.7 percent of the men in the labor force were unemployed in June compared with 8.4 percent in May. If the number of men in the labor force was the same for both months, how many men were unemployed in June of that year?

   (1)   In May of Year X, the number of unemployed men in the labor force was 3.36 million.

   (2)   In Year X, 120,000 more men in the labor force were unemployed in June than in May.

255. If $x \ne 0$, what is the value of $\left(\dfrac{x^p}{x^q}\right)^4$?

   (1) $p = q$

   (2) $x = 3$

256. On Monday morning a certain machine ran continuously at a uniform rate to fill a production order. At what time did it completely fill the order that morning?

   (1)   The machine began filling the order at 9:30 a.m.

   (2)   The machine had filled $\dfrac{1}{2}$ of the order by 10:30 a.m. and $\dfrac{5}{6}$ of the order by 11:10 a.m.

257. If $kmn \ne 0$, is $\dfrac{x}{m}(m^2 + n^2 + k^2) = xm + yn + zk$?

   (1) $\dfrac{z}{k} = \dfrac{x}{m}$

   (2) $\dfrac{x}{m} = \dfrac{y}{n}$
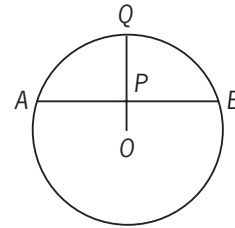
258. What is the radius of the circle above with center O ?

   (1)   The ratio of OP to PQ is 1 to 2.

   (2) P is the midpoint of chord AB.

259. What is the number of 360-degree rotations that a bicycle wheel made while rolling 100 meters in a straight line without slipping?
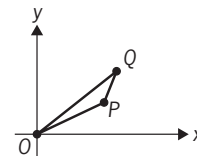
   (1)   The diameter of the bicycle wheel, including the tire, was 0.5 meter.

   (2)   The wheel made twenty 360-degree rotations per minute.

260. If $2x(5n) = t$, what is the value of t ?

   (1) $x = n + 3$

   (2) $2x = 32$

261. In the equation $x^2 + bx + 12 = 0$, x is a variable and b is a constant. What is the value of b ?

   (1) $x - 3$ is a factor of $x^2 + bx + 12$.

   (2)   4 is a root of the equation $x^2 + bx + 12 = 0$.

262. In the figure above, line segment OP has slope $\dfrac{1}{2}$ and line segment PQ has 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).

263. In $\triangle XYZ$, what is the length of YZ?

    (1)   The length of XY is 3.

    (2)   The length of XZ is 5.

264. If the average (arithmetic mean) of n consecutive odd integers is 10, what is the least of the integers?

    (1)   The range of the n integers is 14.

    (2)   The greatest of the n integers is 17.

265. If x, y, and z are positive numbers, is $x > y > z$?

    (1) $xz > yz$

    (2) $yx > yz$

266. K is a set of numbers such that

    (i)   if x is in K, then $-x$ is in K, and

    (ii)   if each of x and y is in K, then xy is in K.

    Is 12 in K?

    (1)   2 is in K.

    (2)   3 is in K.

267. If $x^2 + y^2 = 29$, what is the value of $(x - y)^2$?

    (1) $xy = 10$

    (2) $x = 5$

268. After winning 50 percent of the first 20 games it played, Team A won all of the remaining games it played. What was the total number of games that Team A won?

    (1)   Team A played 25 games altogether.

    (2)   Team A won 60 percent of all the games it played.

269. Is x between 0 and 1?

    (1) x^2 is less than x.

    (2) x^3 is positive.

270. If m and n are nonzero integers, is m^n an integer?

    (1) n^m is positive.

    (2) n^m is an integer.

271. What is the value of xy?

    (1) $x + y = 10$

    (2) $x - y = 6$

272. Is x^2 greater than x?

    (1) x^2 is greater than 1.

    (2) x is greater than -1.

273. Michael arranged all his books in a bookcase with 10 books on each shelf and no books left over. After Michael acquired 10 additional books, he arranged all his books in a new bookcase with 12 books on each shelf and no books left over. How many books did Michael have before he acquired the 10 additional books?

    (1)   Before Michael acquired the 10 additional books, he had fewer than 96 books.

    (2)   Before Michael acquired the 10 additional books, he had more than 24 books.

274. If $xy > 0$, does $(x - 1)(y - 1) = 1$?

    (1) $x + y = xy$

    (2) $x = y$

275. Last year in a group of 30 businesses, 21 reported a net profit and 15 had investments in foreign markets. How many of the businesses did not report a net profit nor invest in foreign markets last year?

    (1)   Last year 12 of the 30 businesses reported a net profit and had investments in foreign markets.

    (2)   Last year 24 of the 30 businesses reported a net profit or invested in foreign markets, or both.

276. Is the perimeter of square S greater than the perimeter of equilateral triangle T?

    (1)   The ratio of the length of a side of S to the length of a side of T is 4:5.

    (2)   The sum of the lengths of a side of S and a side of T is 18.

277. If $x + y + z > 0$, is $z > 1$?

    (1) $z > x + y + 1$

   (2) $x + y + 1 < 0$

Cancellation Fees

Days Prior to Departure	Percent of Package Price
46 or more	10%
45–31	35%
30–16	50%
15–5	65%
4 or fewer	100%

278. The table above shows the cancellation fee schedule that a travel agency uses to determine the fee charged to a tourist who cancels a trip prior to departure. If a tourist canceled a trip with a package price of $1,700 and a departure date of September 4, on what day was the trip canceled?

    (1) The cancellation fee was $595.
    (2) If the trip had been canceled one day later, the cancellation fee would have been $255 more.

279. For all z, $\lceil z \rceil$ denotes the least integer greater than or equal to z. Is $\lceil x \rceil = 0$?

    (1) $-1 < x < -0.1$
    (2) $\lceil x + 0.5 \rceil = 1$
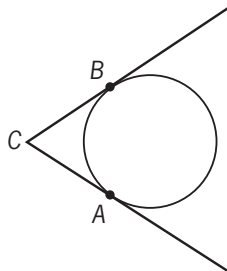
280. The circular base of an above-ground swimming pool lies in a level yard and just touches two straight sides of a fence at points A and B, as shown in the figure above. Point C is on the ground where the two sides of the fence meet. How far from the center of the pool's base is point A ?

    (1) The base has area 250 square feet.
    (2) The center of the base is 20 feet from point C.

281. If $xy = -6$, what is the value of $xy(x + y)$?

    (1) $x - y = 5$
    (2) $xy^2 = 18$

282. [y] denotes the greatest integer less than or equal to y. Is $d < 1$?

    (1) $d = y - [y]$
    (2) $[d] = 0$

283. If m is a positive integer, then m^3 has how many digits?

    (1) m has 3 digits.
    (2) m^2 has 5 digits.

284. For each landscaping job that takes more than 4 hours, a certain contractor charges a total of r dollars for the first 4 hours plus $0.2r$ dollars for each additional hour or fraction of an hour, where $r > 100$. Did a particular landscaping job take more than 10 hours?

    (1) The contractor charged a total of $288 for the job.
    (2) The contractor charged a total of $2.4r$ dollars for the job.

285. The sequence s_1, s_2, s_3, ..., s_n, ... is such that $s_n = \dfrac{1}{n} - \dfrac{1}{n+1}$ for all integers $n \geq 1$. If k is a positive integer, is the sum of the first k terms of the sequence greater than $\dfrac{9}{10}$?

    (1) $k > 10$
    (2) $k < 19$

286. If x and y are nonzero integers, is $x^y < y^x$?

    (1) $x = y^2$
    (2) $y > 2$

287. In the sequence S of numbers, each term after the first two terms is the sum of the two immediately preceding terms. What is the 5th term of S ?

    (1) The 6th term of S minus the 4th term equals 5.
    (2) The 6th term of S plus the 7th term equals 21.