34

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07:39

34. Is y an integer?

(1) y^3 is a multiple of 9.
(2) 2y + 1 is odd.

~~(1)~~

$y^3 =$	9	18	27
$y =$	$\sqrt[3]{9}$	$\sqrt[3]{18}$	3
Is y an integer?	No	No	Yes

- (2)

$2y + 1 =$	1	3	5	7
$2y =$	0	2	4	6
$y =$	0	1	2	3
Is y an integer?	Y	Y	Y	Y

B

35

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07:40

35. If A+B ≠ 0, what is the sum of the three digit numbers 3A5 and 4B7?

(1) A is even and B is a multiple of 3.
(2) A + B is divisible by 9

$$\begin{array}{r} 3A5 \\ +\ 4B7 \\ \hline \end{array}$$

A + B = ?

~~(1)~~ A : 2 4 6 8

B : 3 6 9

−(½) A + B = 9 only

~~(2)~~ A + B = 9 or 18

9+9

C

36

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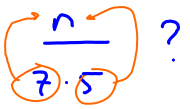
multiple / factor

36. Is n a multiple of 35?

(1) 21 is a factor of 14n
(2) 10 is a factor of 12n



(1) $\frac{2 \cdot 7 \cdot n}{7 \cdot 3}$ what about 7 and 5?

(2) $\frac{2 \cdot 2 \cdot 3 \cdot n}{2 \cdot 5}$ what about the 7?

(1)+(2) what about the 7?

E

37

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07:44

37. If y is real, is $x > 2$?

(1) $x^5y^2 - 32y^2$ is positive
(2) $16y^2 - x^4y^2$ is negative

$\sqrt{-3} \rightarrow$ not real

$-(1) \quad y^2(x^5 - 32) > 0$

$(+) \cdot (+) \rightarrow x^5 - 32 > 0$

$x^5 > 32$

$x > 2$

~~(2)~~ $y^2(16 - x^4) < 0$

$(+) \cdot (-)$

$16 - x^4 < 0$

$x^4 > 16$

$x > 2$; yes

$x < -2$; No

A

38

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07:44

38. If x is an integer, is x/2 an even integer?

(1) x/4 is an integer
(2) x/2 is an integer

(1)

$\frac{x}{4}$	$x =$?	4	8	12	16
	$\frac{x}{2} =$	2	4	6	8
	is it even?	Y	Y	Y	Y

(A)

(2) ~~(X)~~ odd or even

39

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07:44

39. If integer n is a 2-digit number, is n divisible by 9?

$\frac{n}{9} = ?$

(1) When n is divided by 3 the remainder is 2.
(2) When n is divided by 7 the remainder is 1.

A

- (1) $\frac{n}{3}$ R = 2 n = 11 14 17 20 23 . . .

since the number is never divisible by 3 it will never be divisible by 9

~~(2)~~ $\frac{n}{7}$ R = 1

n =	15	22	29	36
$\frac{n}{9}$?	No	No	No	Yes

40

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07:45

40. What is the value of C in the equation $Ax^2 + Bx + C = 0$, if the sum of the roots is 10?

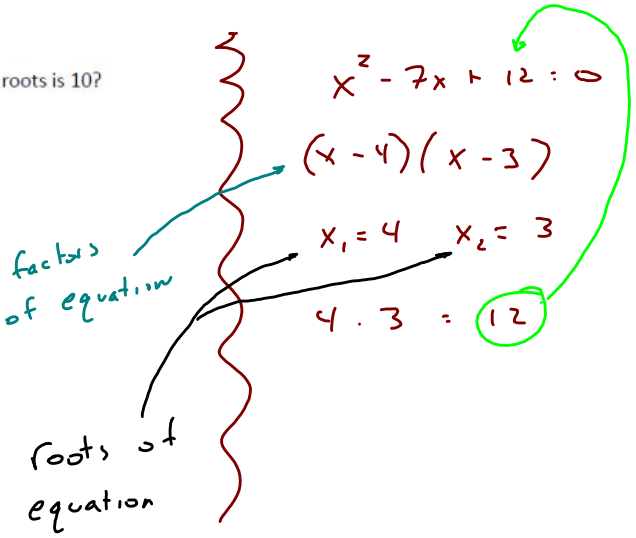
(1) The product of the roots is 16
(2) One root is 4 times the other.

- (1) $C = 16$

- (2) $x_1 = 4x_2$

$x_1 + x_2 = 10$

D



41

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07:45

41. Is ab positive?

(1) $(a + b)^2 > (a - b)^2$

(2) $\frac{a}{b} = 1$

$-(1)\quad a^2 + 2ab + b^2 > a^2 - 2ab + b^2$

$4ab > 0$

$ab > 0$

$-(2)\quad \frac{a}{b} = 1 \longrightarrow a = b$

$+ = +$; yes

$- = -$; yes

D

42

04 April 2011
07:46

42. Who is the slowest among the three workers X, Y and Z?

(1) X & Y together fence a garden of a perimeter of 500m in 14 hours
(2) X, Y and Z together can fence a garden of a perimeter of 500m in 6 hours.

~~X~~ Z = ?

~~Z~~ ~~X Y~~

we can figure out the rate of Z, but there would be no way to determine x or y; thus insuf.

E

43

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07:46

$x + y + z = 72$?

43. Does the average of x, y and z = 24?
(1) $z - y = x - z$
(2) $x + y = 46$

(1) $2z = x + y$

(2) $x + y = 46$

$z = ?$

C

$-(1/2)$

$2z = 46$

$z = 23$

$x + y + z = 46 + 23 = 69$; No

44

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07:50

44. The set S of numbers has the following properties:
    i. If x is in S, then 1/x is also in S.
    ii. If both x and y are in S, then so is x + y.

Is 3 in S?

(1) 1/3 is in S.
(2) 1 is in S.

-(1) $\frac{1}{3} \rightarrow 3$; yes

-(2) $1 \rightarrow \frac{1}{1}$ 1 1 $\rightarrow 2$

1 2 $\rightarrow 3$; yes

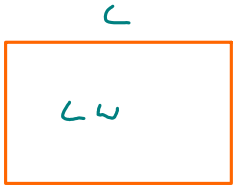
D

45

04 April 2011
07:50

45. If a certain quadrilateral has 4 equal angles, what is its area?

(1) If the length is doubled, the area would increase by 64 square meters.
(2) If the width is reduced by half, the area would decrease by 32 square meters.



- (1)

$2L \cdot W = LW + 64$

$LW = 64$

- (2)

$\frac{1}{2} \cdot W \cdot L = LW - 32$

$LW = 2LW - 64$

$LW = 64$

D

04 April 2011
07:51

46. What is the fifth number in a sequence of consecutive even numbers?

(1) The sum of the first three numbers in the sequence is 12.
(2) The sum of the last three numbers in the sequence is 24.

- (1) $\frac{12}{3} = 4$ ← middle of the three

2 4 6 8 (10) . . .

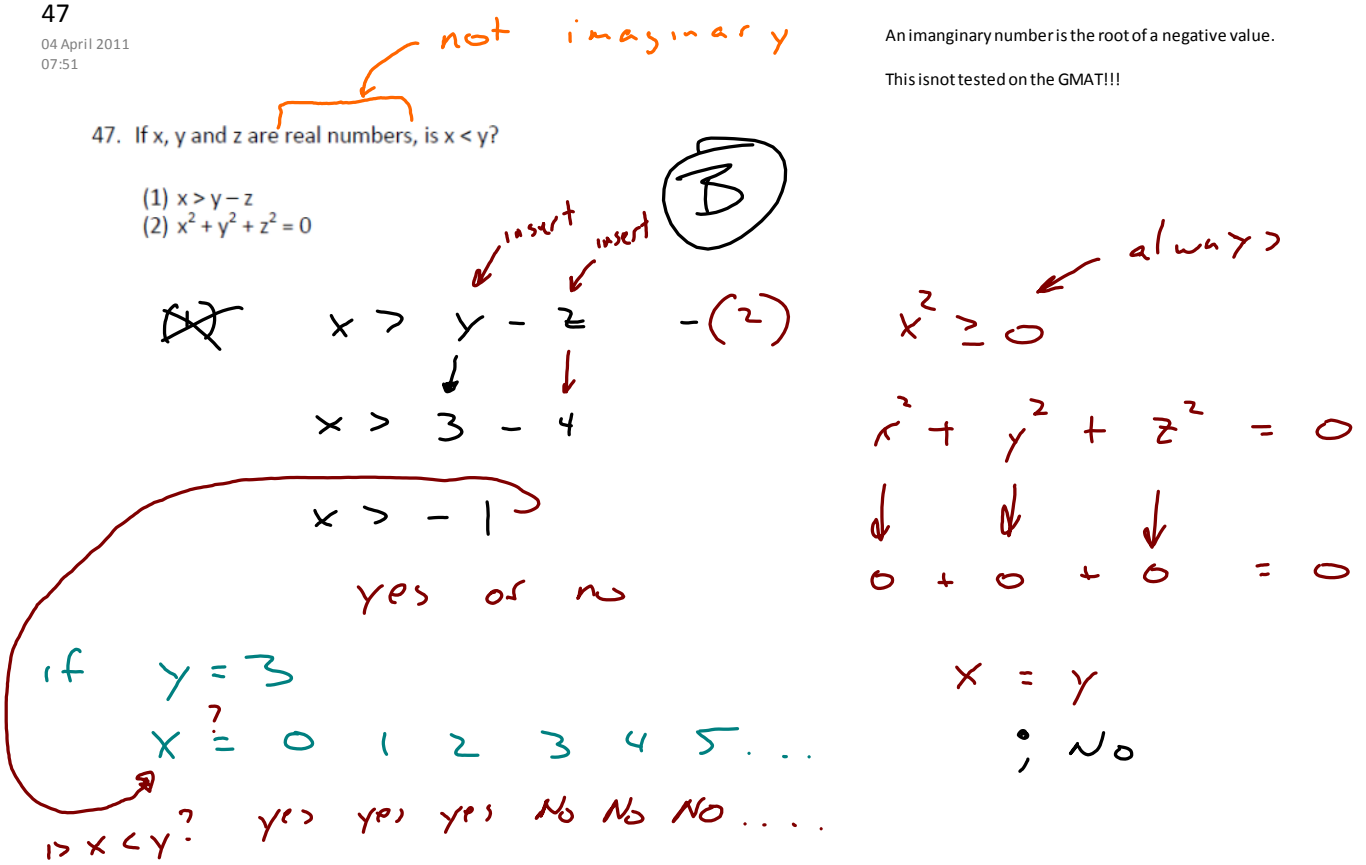
(2) $\frac{24}{3} = 8$ ← middle of the three

47

04 April 2011
07:51

47. If x, y and z are real numbers, is x < y?

(1) x > y − z
(2) $x^2 + y^2 + z^2 = 0$



An imanginary number is the root of a negative value.

This isnot tested on the GMAT!!!

04 April 2011
07:52

48. If x = 6386B, and B is the units digit of x, what is the value of B?

(1) ½ x has a remainder of 1.
(2) x/7 is an integer.

~~(1)~~ $\frac{x}{2}$ R = 1 → x = 1 3 5 7

x = odd

B is any odd

~~(2)~~ x is a multiple of 7

X = 6386B

6386(1)
6386(8)

mult of 7

63000
63700
63840
63861

- (½) 63861 ← odd

C

49

04 April 2011
07:53

49. If x = 7495B, and B is the units digit of x, what is the value of B?

(1) x is an even number
(2) x/11 is an integer

~~(1)~~ B is any even

-(2) in each block of 10 numbers there is at maximum only one multiple of 11

So if x is a multiple of 11 then in 7495B the B would have only one value.

(B)

---

mult 7

150
153
156
159

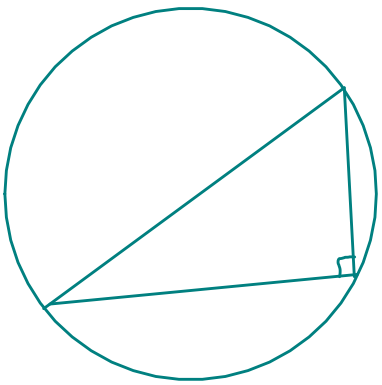
189
196
203

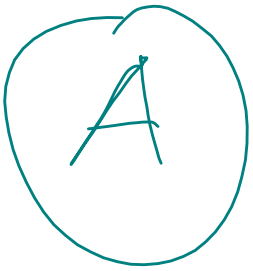
50

04 April 2011
07:53

50. What is the radius of the circle that circumscribes the triangle PQR?

(1) The sides of the triangle are 9, 12 and 15.
(2) Triangle PQR is a right triangle.





-(1) 9 12 15

3·3 3·4 3·5

$3^2 + 4^2 = 5^2$

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

$a^2 + b^2 = c^2 \rightarrow 90^\circ$

if you have a right triangle incribed in a circle the hypotenus is the diameter of the circle.
; thus radius = 15/2

~~(2)~~ gives info I already know from (1)
; thus a C-trap

04 April 2011
07:54

51. What is the value of $\frac{(x^2y^3z^7)^8}{(x^4y^2z^{14})^4}$?

(1) x = z = 12
(2) y = 5

$\frac{x^{16}y^{24}z^{56}}{x^{16}y^8z^{56}} = y^{16} = ?$

(1) $y = ?$

$-(2)\quad 5^{16}$

B

52

04 April 2011
07:54

52. Is n > p?

(1) m/n = p + n
(2) n > m

.

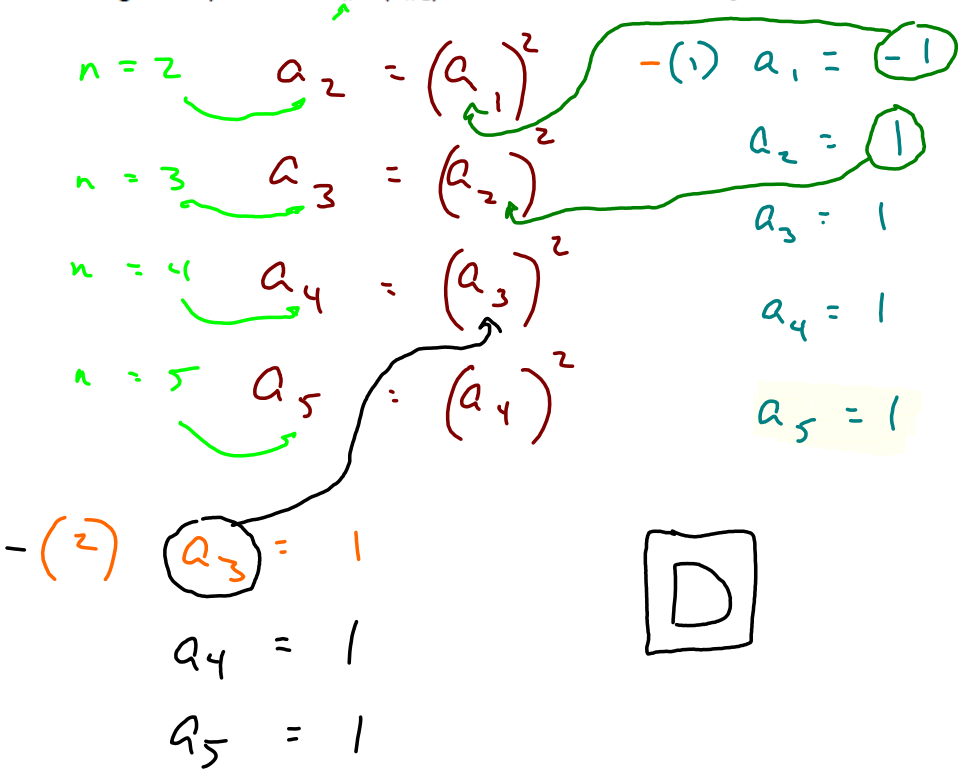
In some cases if your instinct is to say that the answer is most likely E then check for both (1) and (2) first.

If your hunch was correct then by proving that (1) and (2) together is insufficient you would get an automatic (E).

04 April 2011
07:54

53. A sequence of numbers is given by the rule $a_n = (a_{n-1})^2$. What is the value of a_5?

(1) $a_1 = -1$
(2) $a_3 = 1$



54

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07:58

54. A sequence of numbers $a_1, a_2, a_3 \ldots$ is given by the rule $a_n^2 = a_{n+1}$ Does 3 appear in the sequence?

(1) $a_1 = 2$
(2) $a_3 = 16$

$n = 1$ $(a_n)^2 = a_{n+1}$

$(a_1)^2 = a_2$

$n = 2$ $(a_2)^2 = a_3$

$n = 3$ $(a_3)^2 = a_4$

- (1) $a_1 = 2$
$a_2 = 4$
$a_3 = 16$; No

(2) $a_3 = 16$
$a_4 = 256$
$a_2 = \pm 4$
$a_1 = \pm 2$
; No

D

04 April 2011
07:59

55. Is the positive integer n equal to the square of an integer?

(1) For every prime number p, if p is a divisor of n, then so is p^2.
(2) $\sqrt{n}$ is an integer.

Is n a perfect square?

~~(1)~~ p = 2 n = 4 ; yes or n = 8 ; No.

$\frac{4}{2}$ $\frac{4}{4}$ $\frac{8}{2}$ $\frac{8}{4}$

$p^{\frac{4}{2}}$ $p^{\frac{4}{4}}$ $p^{\frac{8}{2}}$ $p^{\frac{8}{4}}$

p^2 p^1 p^4 p^2

-(2)

$\sqrt{n}$ =	1	2	3	4 ...
n =	1^2	2^2	3^2	4^2 ...
Is n a perfect square?	yes	yes	yes	yes

B

56

04 April 2011
07:59

56. Is c > d ?

(1) 1 - c/d > -1
(2) ½ < c/d < 2.0

~~(1)~~ $1 - \frac{c}{d} > -1$

$2 > \frac{c}{d}$

$c = 3$	$c = 5$
$d = 4$	$d = 4$
no	yes

~~(2)~~ $\frac{1}{2} < \frac{c}{d} < 2$

$c = 3$	$c = 5$
$d = 4$	$d = 4$
no	yes

~~(1) (2)~~

E

04 April 2011

a b c

57. If the square root of the product of three distinct positive integers is equal to the largest of the three numbers, what is the product of the two smaller numbers? $ab = ?$

(1) The largest number of the three distinct numbers is 12.
(2) The average (arithmetic mean) of the three numbers is 20/3

$\sqrt{a \cdot b \cdot c} = c$ $\quad \sqrt{c^2} = c$ $\quad \sqrt{r \cdot c} = c$

$ab = c$

D

-(1) $c = 12 \longrightarrow ab = 12$

-(2) $a + b + c = 20$

$2 + 6 + 12 = 20$

$2 \cdot 6 = 12$

which is the only set of integers that would work.

58

04 April 2011
08:00

58. If $x \neq 2$, what is the value of $\frac{(x-2)^n}{5} + \frac{(2-x)^n}{5}$?

(1) $x^3 = 27$
(2) ½ n has a remainder of 1.

~~(A)~~ $x = 3$

$\frac{(1)^n}{5} + \frac{(-1)^n}{5}$

if n is any even

$\frac{1}{5} + \frac{1}{5} = \frac{2}{5}$

if n is any odd

$\frac{1}{5} - \frac{1}{5} = 0$

$-(2)$ n = odd

if $x = 4$

$\frac{(2)^{odd}}{5} + \frac{(-2)^{odd}}{5} = 0$

always zero

(B)

THIS question is a total C-trap.

Most people would put the three in for x and and odd for n and think you need both statements to answer the question.
If you JUST look at (2) ALONE you can insert any value you want for x and find the same result.
THUS you need only (2).

Be careful of statements like (1) in wich they just hand you a number for free.
In most cases when you are given a number for free it is the other statment alone.

59

04 April 2011
08:00

$7 \quad 7n \quad 7n^2 \quad 7n^3 \quad 7n^4 \; ? \qquad n = ?$

59. A sequence of different numbers beginning with 7 is created by multiplying a preceding number by the positive integer, N. What is the fifth number in the sequence?

(1) The 4th and 5th numbers differ by four times as much as the difference between the 2nd and 3rd numbers.

(2) The product of the 3rd and 4th numbers is 14 times the 5th number.

$-(1) \quad 7n^4 - 7n^3 = 4(7n^2 - 7n)$

$7n^3(n-1) = 4 \cdot 7n(n-1)$

$n^2 = 4$

$n = 2$

$-(2) \quad 7n^2 \cdot 7n^3 = 14 \cdot 7n^4$

$7 \cdot 7 \cdot n^5 = 7 \cdot 7 \cdot 2n^4$

$n = 2$

D

60

04 April 2011
08:01

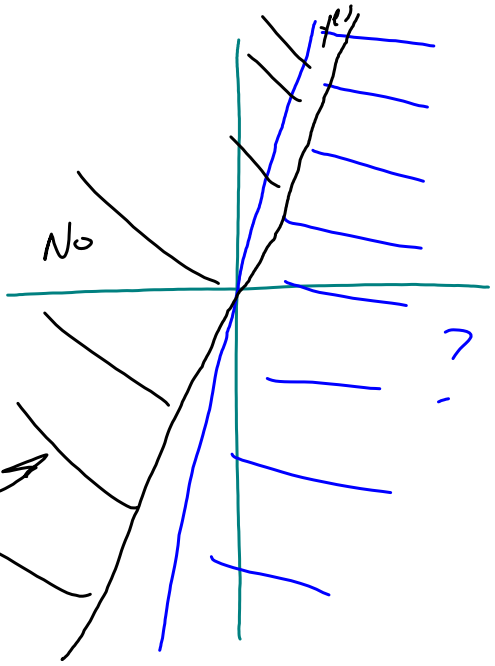
60. Is $\frac{x}{12} > \frac{y}{40}$?

(1) $10x > 3y$
(2) $12x < 4y$

$40x > 12y$?

$10x > 3y$ ← slope

$y < \frac{10}{3}x$?



A

-(1) $y < \frac{10}{3}x$

~~(2)~~ $y > 3x$

↳ slope

Since in statement (2) the slopes are not the same the lines will cross. If the lines cross you would get sometimes yes sometimes no.

61

04 April 2011
08:01

61. If n is an integer, is 3^n less than 100?

(1) $3^{n+1} > 100$
(2) $3^{n-1} = 3^n - 162$

if $n \leq 4$; yes

~~(1)~~ $n = 4$; yes

$n = 5$; no

-(2) is an equation

It would be possible to solve for n.

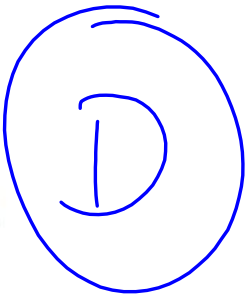
B

62

04 April 2011
08:01

62. k is a positive integer. Is k a prime number?

(1) No integer between 2 and √k inclusive divides k evenly.
(2) No integer between 2 and k/2 inclusive divides k evenly, and k is greater than 5.



The trick to test to see if a number is prime:

Check all prime numbers less than the root of the number in questions.
If no prime factor less than the root of the number in question is a factor of the number in question then the number in question is prime.

(1) This would clearly tell you that k is prime, because no prime number less than the root is a factor

(2) would also tell you that k is prime; no number less than the root is prime.

63

04 April 2011
08:02

63. Is 22 a factor of x?

(1) 22 is a factor of 15x

(2) 22 is a factor of 16x

$\frac{x}{2 \cdot 11}$

A

(1) $\frac{3 \cdot 5 \cdot x}{2 \cdot 11}$; yes

~~(2)~~ $\frac{x \cdot 2 \cdot 2 \cdot 2 \cdot x}{2 \cdot 11}$; Maybe