

Model Test Paper 20
General Study Paper II

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TEST BOOKLET
GENERAL STUDIES
Paper-II

D

Time Allowed : Two Hours

Maximum Marks : 200

INSTRUCTIONS

1. IMMEDIATELY AFTER THE COMMENCEMENT OF THE EXAMINATION YOU SHOULD CHECK THAT THE TEST BOOKLET *DOES NOT* HAVE ANY UNPRINTED OR TORN OR MISSING PAGES OR ITEMS, ETC, IF SO, GET IT REPLACED BY A COMPLETE TEST BOOKLET.
2. **Please note that it is the candidate's responsibility to encode and fill in the Roll Number and Test Booklet Series A, B, C or D carefully and without any omission or discrepancy at the appropriate place in the OMR Answer Sheet. Any omission/discrepancy will render the Answer Sheet liable for rejection.**
3. You have to enter your Roll Number on the Test Booklet in the Box provided alongside . *DO NOT* write *anything else* on the Test Booklet.
4. This Test Booklet contains **80** items (questions). Each item comprises four responses (answers). You will select the response which you want to mark on the Answer Sheet. In case you feel that there is more than one correct response, mark the response which you consider the best. In any case, choose *ONLY ONE* response for each item.
5. You have to mark all your responses *ONLY* on the separate Answer Sheet provided.
6. **All** items carry equal marks.
7. Before you proceed to mark in the Answer Sheet the response to various items in the Test Booklet, you have to fill in some particulars in the Answer Sheet as per instructions sent to you with your Admission Certificate.
8. After you have completed filling in all your responses on the Answer Sheet and the examination has concluded, you should hand over to the invigilator only the *Answer Sheet*. You are permitted to take away with you the Test Booklet.
9. Sheets for rough work are appended in the Test Booklet at the end.
10. **Penalty for wrong Answers :**
THERE WILL BE PENALTY FOR WRONG ANSWERS MARKED BY A CANDIDATE IN THE OBJECTIVE TYPE QUESTION PAPERS.
(i) There are four alternatives for the answer to every question. For each question for which a wrong answer has been given by the candidate, **one-third** of the marks assigned to that question will be deducted as penalty.
(ii) If a candidate gives more than one answer, it will be treated as a **wrong answer** even if one of the given answers happens to be correct and there will be same penalty as above to that question.
(iii) If a question is left blank, i.e., no answer is given by the candidate, there will be **no penalty** for that question.

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Caffeine, the stimulant in coffee, has been called "the most widely used psychoactive substance on Earth." Snyder, Daly and Bruns have recently proposed that caffeine affect behavior by countering the activity in the human brain of a naturally occurring chemical called adenosine. Adenosine normally depresses neuron firing in many areas of the brain. It apparently does this by inhibiting the release of neurotransmitters, chemicals that carry nerve impulses from one neuron to the next. Like many other agents that affect neuron firing, adenosine must first bind to specific receptors on neuronal membranes. There are at least two classes of these receptors, which have been designated A1 and A2. Snyder et al propose that caffeine, which is structurally similar to adenosine, is able to bind to both types of receptors, which prevents adenosine from attaching there and allows the neurons to fire more readily than they otherwise would. For many years, caffeine's effects have been attributed to its inhibition of the production of phosphodiesterase, an enzyme that breaks down the chemical called cyclic AMP. A number of neurotransmitters exert their effects by first increasing cyclic AMP concentrations in target neurons. Therefore, prolonged periods at the elevated concentrations, as might be brought about by a phosphodiesterase inhibitor, could lead to a greater amount of neuron firing and, consequently, to behavioral stimulation. But Snyder et al point out that the caffeine concentrations needed to inhibit the production of phosphodiesterase in the brain are much higher than those that produce stimulation. Moreover, other compounds that block phosphodiesterase's activity are not stimulants. To buttress their case that caffeine acts instead by preventing adenosine binding, Snyder et al compared the stimulatory effects of a series of caffeine derivatives with their ability to dislodge adenosine from its receptors in the brains of mice. "In general," they reported, "the ability of the compounds to compete at the receptors correlates with their ability to stimulate locomotion in the mouse; i.e., the higher their capacity to bind at the receptors, the higher their ability to stimulate locomotion." Theophylline, a close structural relative of caffeine and the major stimulant in tea, was one of the most effective compounds in both regards.

There were some apparent exceptions to the general correlation observed between adenosine-receptor binding and stimulation. One of these was a compound called 3-isobutyl-1-methylxanthine (IBMX), which bound very well but actually depressed mouse locomotion. Snyder et al suggests that this is not a major stumbling block to their hypothesis. The problem is that the compound has mixed effects in the brain, a not unusual occurrence with psychoactive drugs. Even

caffeine, which is generally known only for its stimulatory effects, displays this property, depressing mouse locomotion at very low concentrations and stimulating it at higher ones.

1. The primary purpose of the passage is to

- (a) discuss a plan for investigation of a phenomenon that is not yet fully understood
- (b) present two explanations of a phenomenon and reconcile the differences between them
- (c) summarize two theories and suggest a third theory that overcomes the problems encountered in the first two
- (d) describe an alternative hypothesis and provide evidence and arguments that support it

2. Which of the following, if true, would most weaken the theory proposed by Snyder et al?

- (a) At very low concentrations in the human brain, both caffeine and theophylline tend to have depressive rather than stimulatory effects on human behavior.
- (b) The ability of caffeine derivatives at very low concentrations to dislodge adenosine from its receptors in mouse brains correlates well with their ability to stimulate mouse locomotion at these low concentrations.
- (c) The concentration of cyclic AMP in target neurons in the human brain that leads to increased neuron firing can be produced by several different phosphodiesterase inhibitors in addition to caffeine.
- (d) The concentration of caffeine required to dislodge adenosine from its receptors in the human brain is much greater than the concentration that produces behavioral stimulation in humans.

3. According to Snyder et al, caffeine differs from adenosine in that caffeine

- (a) stimulates behavior in the mouse and in humans, whereas adenosine stimulates behavior in humans only
- (b) has mixed effects in the brain, whereas adenosine has only a stimulatory effect
- (c) increases cyclic AMP concentrations in target neurons, whereas adenosine decreases such concentrations

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<p>(d) permits release of neurotransmitters when it is bound to adenosine receptors, whereas adenosine inhibits such release</p> <p>4. In response to experimental results concerning IBMX, Snyder et al contended that it is not uncommon for psychoactive drugs to have</p> <p>(a) mixed effects in the brain</p> <p>(b) inhibitory effects on enzymes in the brain</p> <p>(c) close structural relationships with caffeine</p> <p>(d) depressive effects on mouse locomotion</p> <p>5. The passage suggests that Snyder et al believe that if the older theory concerning caffeine's effects were correct, which of the following would have to be the case?</p> <p>I. All neurotransmitters would increase the short-term concentration of cyclic AMP in target neurons.</p> <p>II. Substances other than caffeine that inhibit the production of phosphodiesterase would be stimulants.</p> <p>III. All concentration levels of caffeine that are high enough to produce stimulation would also inhibit the production of phosphodiesterase.</p> <p>(a) I only</p> <p>(b) I and II only</p> <p>(c) I and III only</p> <p>(d) II and III only</p> <p>6. According to Snyder et al, all of the following compounds can bind to specific receptors in the brain EXCEPT</p> <p>(a) IBMX</p> <p>(b) caffeine</p> <p>(c) phosphodiesterase</p> <p>(d) theophylline</p> <p>7. Snyder et al suggest that caffeine's ability to bind to A1 and A2 receptors can be at least partially attributed to which of the following?</p> <p>(a) The chemical relationship between caffeine and phosphodiesterase</p>	<p>(b) The structural relationship between caffeine and adenosine</p> <p>(c) The structural similarity between caffeine and neurotransmitters</p> <p>(d) The ability of caffeine to stimulate behavior</p> <p>8. The author quotes Snyder et al in the second para most probably in order to</p> <p>(a) reveal some of the assumptions underlying their theory</p> <p>(b) summarize a major finding of their experiments</p> <p>(c) point out that their experiments were limited to the mouse</p> <p>(d) indicate that their experiments resulted only in general correlations</p> <p>9. The last paragraph of the passage performs which of the following functions?</p> <p>(a) Describes a disconfirming experimental result and reports the explanation given by Snyder et al in an attempt to reconcile this result with their theory.</p> <p>(b) Specifies the basis for the correlation observed by Snyder et al and presents an explanation in an attempt to make the correlation consistent with the operation of psychoactive drugs other than caffeine.</p> <p>(c) Elaborates the description of the correlation observed by Snyder et al and suggests an additional explanation in an attempt to make the correlation consistent with the older theory.</p> <p>(d) Reports inconsistent experimental data and describes the method Snyder et al will use to reanalyze this data.</p>
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<p>A fossilised skeleton of a lemur-like animal recently found in Germany could be a missing link in the evolutionary chain of human ancestry. Jorn Hurum, a palaeontologist from Oslo, Norway, and his team have studied the 47 million year old fossil and say it provides a link between lemurs and the higher primates that include apes, monkeys and humans. The lemur-like creature, named 'Ida' has characteristics similar to those of higher primates including short limbs, nails instead of claws, hands that can grasp things, and opposable thumbs. The most remarkable thing about the fossil is that it is so well preserved, showing evidence of fur and soft tissue as well as the remains of a meal. However, a biological anthropologist at George Washington University, Brian Richmond, says it provides only one branching point in the evolutionary tree and there's still a big gap in the fossil record. Ida's discovery probably provides more questions than answers.</p> <p>10. Ida is a fossilised skeleton of a lemur-like creature recently found in Norway</p> <p>(a) True (b) False (c) Cannot say (d)</p> <p>11. Ida had short limbs, nails instead of claws, and opposable thumbs</p> <p>(a) True (b) False (c) Cannot say (d)</p> <p>12. Ida's European origins show that the European continent was an important area for primate evolution</p> <p>(a) True (b) False (c) Cannot say (d)</p>	<p>The price of a barrel of oil, which fell from around \$147 in July 2008 to just \$36 in December 2008, has shown an increase in recent months to around \$60 a barrel in May 2009. The oil ministers of Saudi Arabia and Iran believe that, as the world recovers from the global recession, the price of oil will increase further and there may be another price shock ahead similar to that of last year. To prevent this happening experts agree that now is the time to invest in exploration and the development of new fields. However, the opposite is happening. The number of drilling rigs in use around the world fell by 32% in the year to April, and big companies such as Shell and BP have delayed expansion plans and cut staff. Oil-rich states, such as Saudi Arabia (whose king thinks \$75 a barrel is a fair price), are happy to see the price rise again to increase their revenue.</p> <p>13. The price of a barrel of oil more than halved between July 2008 and May 2009</p> <p>(a) True (b) False (c) Cannot say (d)</p> <p>14. To prevent oil prices spiralling again to new heights, experts agree that oil companies need to reduce investment in exploration and the development of new fields</p> <p>(a) True (b) False (c) Cannot say (d)</p> <p>15. A fair price for a barrel of oil is \$75</p> <p>(a) True (b) False (c) Cannot say (d)</p>
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Acupuncture originated in China at least 2,000 years ago but is widely used in other East Asian countries. Before the early part of the twentieth century, acupuncture needles were large and inserted deeply at the site of the problem. Today they use smaller, fine needles which are inserted at strategic points in the body. These points give access to 14 channels that connect the bodily organs, called meridians. It is believed by some that a natural energy called Qi flows freely through the meridians of a healthy person. Qi consists of two opposite forces, Yin and Yang. When a person is ill, the Yin and Yang are out of balance, or the Qi is blocked. The aim of acupuncture is to restore this balance and thus harmony and health in the patient. Acupuncture is an invasive technique, so there are risks in its use – of harm to bodily organs from incorrect positioning of needles, or from infection. Although there is evidence that acupuncture can give some pain relief, its treatment of other diseases is not proven and you would be better off visiting a conventional doctor.

16. Acupuncture has been used in Europe since the early 18th century

- (a) True
- (b) False
- (c) Cannot say
- (d)

17. Today acupuncturists use large needles inserted at the site of the problem

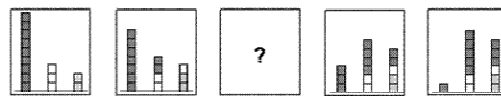
- (a) True
- (b) False
- (c) Cannot say
- (d)

18. Acupuncturists believe that a natural energy called Qi flows through channels in our bodies called meridians

- (a) True
- (b) False
- (c) Cannot say
- (d)

19. The only risk associated with acupuncture is infection from needles

- (a) True
 - (b) False
 - (c) Cannot say
 - (d)
- 20.



Which of the following replaces the question mark in the sequence?

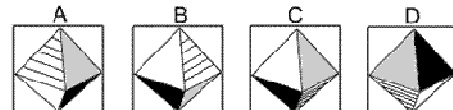


- (a) A
- (b) B
- (c) C
- (d) D

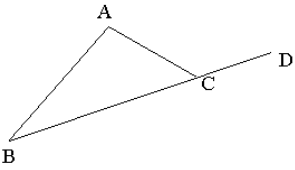
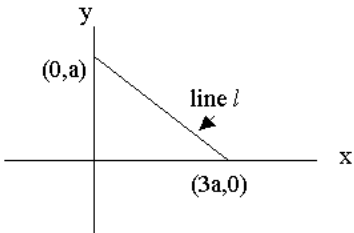
21.



Which of the following replaces the question mark in the sequence?



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<p>(a) A (b) B (c) C (d) D</p> <p>22. The price of a cycle is reduced by 25 per cent. The new price is reduced by a further 20 per cent. The two reductions together are equal to a single reduction of</p> <p>(a) 45% (b) 40% (c) 35% (d) 32.5%</p> <p>23. x and y are integers $x + y < 11$, and $x > 6$ What is the smallest possible value of $x - y$?</p> <p>(a) 1 (b) 2 (c) 4 (d) -2</p> <p>24. If $x^5y^4z^2 < 0$, which of the following must be true? I $xy < 0$ II $yz < 0$ III $xz < 0$</p> <p>(a) I (b) II (c) III (d) None</p> <p>25.</p> <div style="text-align: center;">  <p><i>(figure not to scale)</i></p> </div>	<p>BCD is a line segment and Angle BAC = $\frac{1}{4}$ Angle ACB ; Angle ACD = ?</p> <p>(a) 140 (b) 100 (c) 120 (d) it cannot be determined from the information given</p> <p>26. Which of the following integers is in the solution set of $1 - 3x < 5$? I -1 II 1 III 2</p> <p>(a) I only (b) II only (c) III only (d) I and II only</p> <p>27. In a certain village, m litres of water are required per household per month. At this rate, if there are n households in the village, how long (in months) will p litres of water last?</p> <p>(a) p/mn (b) mn/p (c) mp/n (d) np/m</p> <p>28.</p> <div style="text-align: center;">  </div> <p>In the figure above, what is the slope of line l ?</p>
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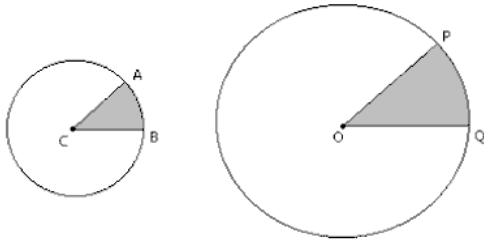
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- (a) - 3
- (b) - 1/3
- (c) 0
- (d) 1/3

29. What digit appears in the units place in the number obtained when 2320 is multiplied out?

- (a) 0
- (b) 0
- (c) 4
- (d) 6

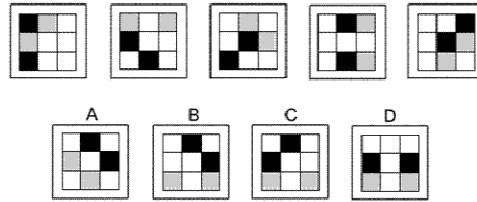
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Radius of circle center O is 3 times the radius of circle center C.
Angle ACB = Angle POQ
If the shaded area of circle C is 2 then what is the area of the shaded part of circle O ?

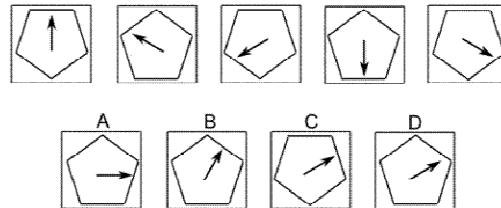
- (a) 6
- (b) 12
- (c) 18
- (d) 36

31.



- (a) A
- (b) B
- (c) C
- (d) D

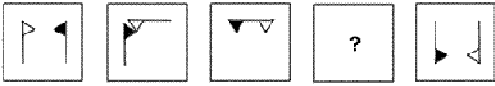
32.



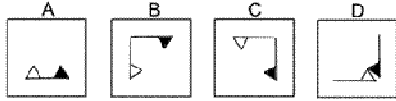
- (a) A
- (b) B
- (c) C
- (d) D

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33.

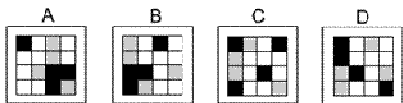
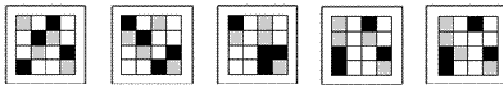


Which of the following replaces the question mark in the sequence?



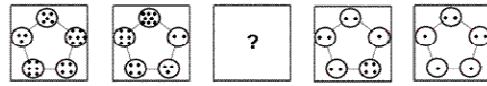
- (a) A
- (b) B
- (c) C
- (d) D

34.

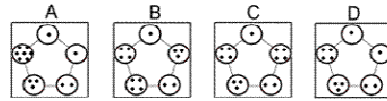


- (a) A
- (b) B
- (c) C
- (d) D

35.

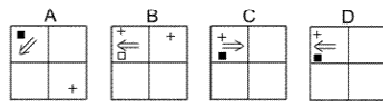
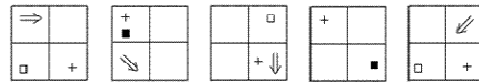


Which of the following replaces the question mark in the sequence?



- (a) A
- (b) B
- (c) C
- (d) D

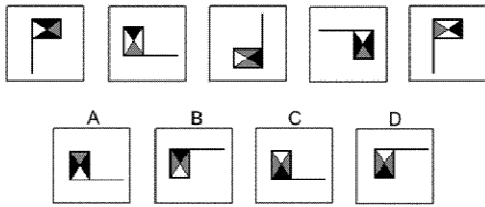
36.



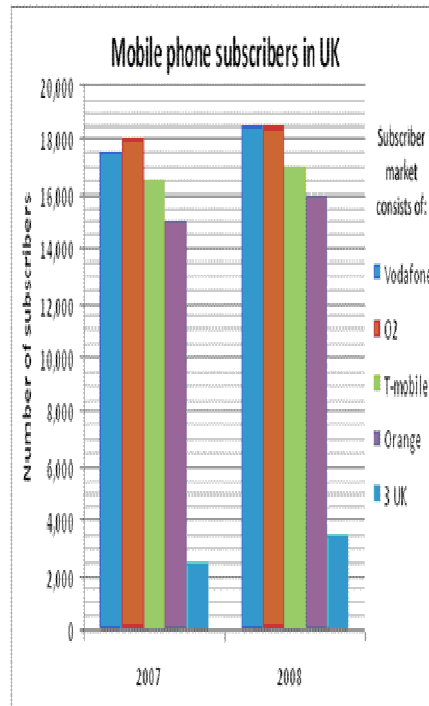
- (a) A
- (b) B
- (c) C
- (d) D

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37.



- (a) A
- (b) B
- (c) C
- (d) D



38. Which provider showed the greatest percentage increase in subscribers between 2007 and 2008?

- (a) Vodafone
- (b) T-mobile
- (c) Orange
- (d) 3 UK

39. Which provider maintained the same percentage of the subscriber market share for both 2007 and 2008?

- (a) Vodafone
- (b) O2
- (c) T-mobile
- (d) Orange

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40. If 3 UK continued to increase its share of the subscriber market by the same percentage growth as it did between 2007 and 2008, approximately how many more years (after 2008) would it take until it has more than a 20% share of the subscriber market?

- (a) 3
- (b) 4
- (c) 5
- (d) 6

Percent of each age group who participated in a particular activity

Age	16-19	20-24	25-29	30-44	45-59	60-69	70+	Total for Adult Sample Group
Walking	29	31	33	39	40	37	22	35
Swimming	19	17	17	20	13	7	3	14
Keep fit	15	16	19	16	11	7	4	12
Cycling	18	12	12	13	6	4	2	9
Jogging	11	9	11	8	3	1	0	5
Soccer	24	13	11	6	1	0	0	5
Other	44	34	32	23	14	7	2	19

Survey of the participation rates in a selection of sports, and physical activities. The survey was conducted on a sample of 14,800 adults aged 16 years and over in Great Britain in 2002 and shows the percentage of interviewees who participated in the sports or physical activities in the 4 weeks prior to being interviewed

41. How many of the interviewees played soccer in the four week period?

- (a) 8,880
- (b) 750
- (c) 740
- (d) 700

42. The number of people interviewed in the 16 – 19, 20 – 24 and 25 – 29 age ranges were 750, 1,250 and 1,000 respectively. How many interviewees under 30 years of age cycled during the four week period?

- (a) 1,260
- (b) 405
- (c) 395
- (d) 297

43. The number interviewed in the 30 - 44 age range was 3,800 in total. Of those, 5% said they participated in both walking and swimming during the four week period. How many interviewees in the 30 - 44 age range walked but did not swim?

- (a) 190
- (b) 570
- (c) 722
- (d) 1,292

44. The number interviewed in the 70+ age range was 360. None of the interviewees in this age range participated in more than one activity during the four week period. How many of them did not participate in any activity at all?

- (a) 119
- (b) 231
- (c) 238
- (d) 241

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<p>45. FISH : SCHOOL</p> <p>(a) wolf : pack</p> <p>(b) elephant : jungle</p> <p>(c) beagle : clan</p> <p>(d) herd : peacock</p> <p>46. ODOMETER : DISTANCE</p> <p>(a) scale : weight</p> <p>(b) length : width</p> <p>(c) inch : foot</p> <p>(d) mileage : speed</p> <p>47. SIAMESE : CAT</p> <p>(a) type : breed</p> <p>(b) dog : puppy</p> <p>(c) mark : spot</p> <p>(d) romaine : lettuce</p> <p>48. PEDAL : BICYCLE</p> <p>(a) inch : yardstick</p> <p>(b) walk : skip</p> <p>(c) tire : automobile</p> <p>(d) oar : canoe</p> <p>49. PULSATE : THROB</p> <p>(a) walk : run</p> <p>(b) tired : sleep</p> <p>(c) examine : scrutinize</p> <p>(d) ballet : dance</p> <p>50. ELEPHANT : PACHYDERM</p> <p>(a) mantis : rodent</p> <p>(b) poodle : feline</p>	<p>(c) kangaroo : marsupial</p> <p>(d) zebra : horse</p> <p>51. DEPRESSED : SAD</p> <p>(a) neat : considerate</p> <p>(b) towering : cringing</p> <p>(c) rapid : plodding</p> <p>(d) exhausted : tired</p> <p>Answer questions 52 through 54 on the basis of the information below.</p> <p>Evan is a waiter in a café. After he turns in orders for the six people sitting at the counter—each of whom is eating alone and is sitting in chairs numbered 1 through 6—the cook opens a window in the kitchen and the order slips get messed up. Here’s what Evan remembers about the orders:</p> <p>n The entree orders are: fried eggs, a hamburger, a cheeseburger, a vegetable burger, soup, and a ham sandwich.</p> <p>The two people who did not order sandwiches are sitting at chairs 3 and 4.</p> <p>The person who ordered the cheeseburger and the one who ordered the hamburger are not sitting next to each other.</p> <p>The person in chair number 5 is a regular. She will not sit next to anyone who is eating ham.</p> <p>The person eating the vegetable burger is not sitting in chair 2, but is sitting between the person who ordered fried eggs and the one who ordered a cheeseburger.</p> <p>The customer who ordered the hamburger is not sitting next to the customer who ordered soup.</p> <p>52. To which customer should Evan serve the vegetable burger?</p> <p>(a) the customer in chair 2</p> <p>(b) the customer in chair 3</p> <p>(c) the customer in chair 4</p> <p>(d) the customer in chair 5</p> <p>53. To which customer should Evan serve the soup?</p> <p>(a) the customer in chair 1</p> <p>(b) the customer in chair 2</p>
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<p>(c) the customer in chair 3 (d) the customer in chair 4</p> <p>54. To which customer should Evan serve the ham sandwich?</p> <p>(a) the customer in chair 1 (b) the customer in chair 2 (c) the customer in chair 4 (d) the customer in chair 5</p> <p>Use the additional information below, along with the information before question 52, to answer questions 55 and 56.</p> <p>Now Evan has to decide who gets which side dish. Here is what he remembers, in addition to the previous information, about the orders, which were: cole slaw, hash browns, onion rings, potato salad, french fries, and lettuce salad.</p> <p>The person who ordered soup did not order french fries, hash browns, onion rings, or a lettuce salad. The person who ordered onion rings is sitting in chair 6. The person who ordered potato salad is sitting between the person who ordered cole slaw and the one who ordered hash browns. The person who ordered a vegetable burger ordered a lettuce salad. The hash browns were ordered by the customer who ordered fried eggs.</p> <p>55. With which entrée does the potato salad belong?</p> <p>(a) soup (b) hamburger (c) cheeseburger (d) fried eggs</p> <p>56. With which entrée do the french fries belong?</p> <p>(a) soup (b) cheeseburger (c) hamburger (d) fried eggs</p>	<p>57. Using the digits 1, 2, 3 and 5, how many 4 digit numbers can be formed if the first digit must be 1 and repetition of the digits is allowed?</p> <p>(a) 4 (b) 6 (c) 24 (d) 64</p> <p>58. Using the digits 1, 2, 3 and 5, how many 4 digit numbers can be formed if the first digit must be 1 and repetition of the digits is not allowed?</p> <p>(a) 4 (b) 6 (c) 24 (d) 64</p> <p>59. Using the digits 1, 2, 3 and 5, how many 4 digit numbers can be formed if the number must be divisible by 2 and repetition is allowed?</p> <p>(a) 4 (b) 6 (c) 24 (d) 64</p> <p>60. Using the digits 1, 2, 3 and 5, how many 4 digit numbers can be formed if the number must be divisible by 2 and repetition is not allowed?</p> <p>(a) 4 (b) 6 (c) 24 (d) 64</p> <p>61. A poultry farm has only chickens and pigs. When the manager of the poultry counted the heads of the stock in the farm, the number totaled up to 200. However, when the number of legs was counted, the number totaled up to 540. How many chickens were there in the farm?</p> <p>(a) 70</p>
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(b) 120 (c) 60 (d) 130	66. Which of these numbers cannot be a probability? (a) -0.00001 (b) 1 (c) 1.001 (d) a and c
62. Three years back, a father was 24 years older than his son. At present the father is 5 times as old as the son. How old will the son be three years from now? (a) 12 (b) 6 (c) 3 (d) 9	67. Two dice are rolled, find the probability that the sum is equal to 1 (a) $1/2$ (b) $1/3$ (c) 0 (d) 1
63. For what values of 'k' will the pair of equations $3x + 4y = 12$ and $kx + 12y = 30$ not have a unique solution? (a) 12 (b) 9 (c) 3 (d) 7.5	68. Two dice are rolled, find the probability that the sum is equal to 4 (a) $1/4$ (b) $1/6$ (c) $1/8$ (d) $1/12$
64. The basic one-way air fare for a child aged between 3 and 10 years costs half the regular fare for an adult plus a reservation charge that is the same on the child's ticket as on the adult's ticket. One reserved ticket for an adult costs \$216 and the cost of a reserved ticket for an adult and a child (aged between 3 and 10) costs \$327. What is the basic fare for the journey for an adult? (a) \$111 (b) \$52.5 (c) \$210 (d) \$58.5	69. Two dice are rolled, find the probability that the sum is less than 13 (a) $1/6$ (b) 0 (c) $1/2$ (d) 1
65. Two coins are tossed, find the probability that two heads are obtained (a) $1/2$ (b) $1/3$ (c) $1/4$ (d) $1/5$	70. A die is rolled and a coin is tossed, find the probability that the die shows an odd number and the coin shows a head. (a) $1/2$ (b) $1/4$ (c) $1/6$ (d) $1/8$

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71. A jar contains 3 red marbles, 7 green marbles and 10 white marbles. If a marble is drawn from the jar at random, what is the probability that this marble is white?

- (a) $\frac{1}{8}$
- (b) $\frac{1}{4}$
- (c) $\frac{1}{2}$
- (d) 1

72. If a and b are positive numbers, with $a^3 = 3$ and $a^5 = 12b^2$, what is the ratio of a to b ?

- (a) 1
- (b) 2
- (c) 3
- (d) 4

73. What is the value of $(1 + \frac{7}{5}) / (1 - \frac{7}{5})$?

- (a) 5.4
- (b) 6.4
- (c) 7.4
- (d) 8.4

74. John had \$150. He used 85% of it to pay his electric bill and 5% of it on a gift for his mother. How much did he have left?

- (a) \$5
- (b) \$10
- (c) \$15
- (d) \$20

75. The product of three positive integers is 300. If one of them is 5, what is the least possible value of the sum of the other two?

- (a) 16
- (b) 17
- (c) 19
- (d) 23

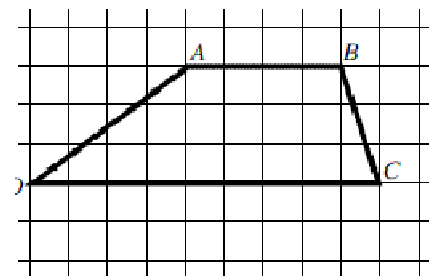
76. A palindrome is a number, such as 93539, that reads the same forward and backward. How many palindromes are there between 100 and 1000?

- (a) 70
- (b) 80
- (c) 90
- (d) 100

77. In how many ways can Al, Bob, Charlie, Dan, and Ed stand in a line if Bob must be first and either Charlie or Dan must be last?

- (a) 8
- (b) 10
- (c) 12
- (d) 14

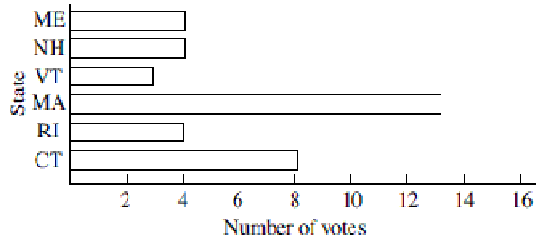
78. In the grid below, what is the area of quadrilateral ABCD?



- (a) 19.5
- (b) 21
- (c) 25.5
- (d) 27

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79. The chart below depicts the number of electoral votes assigned to each of the six New England states. What is the average (arithmetic mean) number of electoral votes, to the nearest tenth, assigned to these states?



- (a) 4.0
- (b) 5.7
- (c) 6.0
- (d) 6.5

80. For any numbers a and b , $a \div b$ is defined as $a \div b = (a + b)/(a - b)$. What is the value of $25 \div 15$?

- (a) 2
- (b) 3
- (c) 4
- (d) 5

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Answer Sheet

	A	B	C	D		A	B	C	D		A	B	C	D		A	B	C	D
1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	21	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	41	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	61	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	22	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	42	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	62	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	23	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	43	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	63	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	24	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	44	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	64	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	25	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	45	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	65	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	26	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	46	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	66	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	27	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	47	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	67	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	28	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	48	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	68	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	29	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	49	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	69	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	30	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	50	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	70	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	31	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	51	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	71	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	32	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	52	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	72	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	33	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	53	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	73	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	34	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	54	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	74	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	35	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	55	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	75	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	36	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	56	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	76	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	37	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	57	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	77	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	38	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	58	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	78	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	39	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	59	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	79	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	40	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	60	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	80	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>