

Refer to the data below and answer the questions that follow.

An exam consisted of 5 sections- QA, DI, LR, VA and RC. The marks per question for these sections are 4, 3, 2, 5 and 3 respectively. The number of questions in each of these sections ranges between 5 and 9, both included, such that no two sections have the same number of questions. The maximum marks that one could have scored are 120. The time limit is 3 minutes per question for QA, DI and LR questions while it is 2 minutes per question for the other two sections. VA had 6 questions. For a section having 7 or more questions, an additional time limit of 1 minute per question is provided (in addition to the time limit of 2 or 3 minutes per question mentioned above).

1) How many questions did the LR section have? —

- ☐ 9
- ☐ 7
- ☐ 8
- ☒ 5 ✓

Video Explanation:



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As the VA section has exactly 6 questions, no other section can have 6 questions. The possibilities for the number of questions for the other 4 sections are 5, 7, 8 and 9, in no particular order. Also, the maximum marks that one could have scored are 120. Maximum marks possible in the VA section = $5 \times 6 = 30$. Thus, the other 4 sections must account for the remaining $120 - 30 = 90$ marks.

Case 1 : QA has 5 questions : The maximum possible marks = $(5 \times 4) + (9 \times 3) + (8 \times 3) + (7 \times 2) = 20 + 27 + 24 + 14 = 85$; thus this case is invalid.

Case 2 : QA has 7 questions : The maximum possible marks = $(7 \times 4) + (9 \times 3) + (8 \times 3) + (5 \times 2) = 28 + 27 + 24 + 10 = 89$; thus this case is also invalid.

Case 3 : QA has 8 questions : The maximum possible marks = $(8 \times 4) + (9 \times 3) + (7 \times 3) + (5 \times 2) = 32 + 27 + 21 + 10 = 90$; thus this case is valid. DI and RC section has either 9 or 7 questions in any order. LR section has 5 questions.

Case 4 : QA has 9 questions : Here, we need to check all three sub cases : i) LR section has 5 questions; (ii) LR section has 7 questions; (iii) LR section has 8 questions.
(i) LR section has 5 questions : Total marks = $36 + 21 + 10 + 24 = 91$ (invalid)
(ii) LR section has 7 questions : Total marks = $36 + 24 + 14 + 15 = 89$ (invalid)
(iii) LR section has 8 questions : Total marks = $36 + 21 + 16 + 15 = 88$ (invalid)

Thus, QA section has 8 questions; DI and RC section has either 9 or 7 questions in any order; LR Section has 5 questions.

The final table will be as follows:

Section	Marks per question	Questions per section	Total marks	Time per question (minutes)	Total time
QA	4	8	32	$3 + 1 = 4$	32
DI	3	7/9	21/27	$3 + 1 = 4$	28/36
LR	2	5	10	3	15
VA	5	6	30	2	12
RC	3	9/7	27/21	$2 + 1 = 3$	27/21

The number of questions in LR section = 5. Hence, [4].

Correct Answer:

Time taken by you: 370 secs

Avg Time taken by all students: 508 secs

Your Attempt: Correct

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2) What is the maximum possible time duration of the _ exam (in minutes)?

- ☐ 92
- ☐ 114
- ☒ 116 ✓
- ☐ 122

Video Explanation:

▼

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As the VA section has exactly 6 questions, no other section can have 6 questions. The possibilities for the number of questions for the other 4 sections are 5, 7, 8 and 9, in no particular order. Also, the maximum marks that one could have scored are 120. Maximum marks possible in the VA section = $5 \times 6 = 30$. Thus, the other 4 sections must account for the remaining $120 - 30 = 90$ marks.

Case 1 : QA has 5 questions : The maximum possible marks = $(5 \times 4) + (9 \times 3) + (8 \times 3) + (7 \times 2) = 20 + 27 + 24 + 14 = 85$; thus this case is invalid.

Case 2 : QA has 7 questions : The maximum possible marks = $(7 \times 4) + (9 \times 3) + (8 \times 3) + (5 \times 2) = 28 + 27 + 24 + 10 = 89$; thus this case is also invalid.

Case 3 : QA has 8 questions : The maximum possible marks = $(8 \times 4) + (9 \times 3) + (7 \times 3) + (5 \times 2) = 32 + 27 + 21 + 10 = 90$; thus this case is valid. DI and RC section has either 9 or 7 questions in any order. LR section has 5 questions.

Case 4 : QA has 9 questions : Here, we need to check all three sub cases : i) LR section has 5 questions; (ii) LR section has 7 questions; (iii) LR section has 8 questions.
(i) LR section has 5 questions : Total marks = $36 + 21 + 10 + 24 = 91$ (invalid)
(ii) LR section has 7 questions : Total marks = $36 + 24 + 14 + 15 = 89$ (invalid)
(iii) LR section has 8 questions : Total marks = $36 + 21 + 16 + 15 = 88$ (invalid)

Thus, QA section has 8 questions; DI and RC section has either 9 or 7 questions in any order; LR Section has 5 questions.

The final table will be as follows:

Section	Marks per question	Questions per section	Total marks	Time per question (minutes)	Total time
QA	4	8	32	$3 + 1 = 4$	32
DI	3	7/9	21/27	$3 + 1 = 4$	28/36
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VA	5	6	30	2	12
RC	3	9/7	27/21	$2 + 1 = 3$	27/21

The time duration of the exam will be the maximum when DI and RC have 9 and 7 questions respectively. Required answer = $32 + 36 + 15 + 12 + 21 = 116$ minutes. Hence, [3].

Correct Answer: ▼

Time taken by you: 88 secs

Avg Time taken by all students: 112 secs

% Students got it correct: **68 %**

Refer to the data below and answer the questions that follow.

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3) How many questions did DI section have? —

- ☐ 9
- ☐ 7
- ☐ 8
- ☒ Cannot be determined ✓

Video Explanation: ▼

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As the VA section has exactly 6 questions, no other section can have 6 questions. The possibilities for the number of questions for the other 4 sections are 5, 7, 8 and 9, in no particular order. Also, the maximum marks that one could have scored are 120. Maximum marks possible in the VA section = $5 \times 6 = 30$. Thus, the other 4 sections must account for the remaining $120 - 30 = 90$ marks.

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Case 3 : QA has 8 questions : The maximum possible marks = $(8 \times 4) + (9 \times 3) + (7 \times 3) + (5 \times 2) = 32 + 27 + 21 + 10 = 90$; thus this case is valid. DI and RC section has either 9 or 7 questions in any order. LR section has 5 questions.

Case 4 : QA has 9 questions : Here, we need to check all three sub cases : i) LR section has 5 questions; (ii) LR section has 7 questions; (iii) LR section has 8 questions.
(i) LR section has 5 questions : Total marks = $36 + 21 + 10 + 24 = 91$ (invalid)
(ii) LR section has 7 questions : Total marks = $36 + 24 + 14 + 15 = 89$ (invalid)
(iii) LR section has 8 questions : Total marks = $36 + 21 + 16 + 15 = 88$ (invalid)

Thus, QA section has 8 questions; DI and RC section has either 9 or 7 questions in any order; LR Section has 5 questions.

The final table will be as follows:

Section	Marks per question	Questions per section	Total marks	Time per question (minutes)	Total time
QA	4	8	32	$3 + 1 = 4$	32
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VA	5	6	30	2	12
RC	3	9/7	27/21	$2 + 1 = 3$	27/21

DI sections had either 7 or 9 questions.
Hence, [4].

Correct Answer:

Time taken by you: 4 secs

Avg Time taken by all students: 35 secs


Your Attempt: Correct

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4) How many questions did QA section Have?

—

- ☐ 9
- ☐ 7
- ☒ 8 
- ☐ Cannot be determined

Video Explanation:

▼

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Case 3 : QA has 8 questions : The maximum possible marks = $(8 \times 4) + (9 \times 3) + (7 \times 3) + (5 \times 2) = 32 + 27 + 21 + 10 = 90$; thus this case is valid. DI and RC section has either 9 or 7 questions in any order. LR section has 5 questions.

Case 4 : QA has 9 questions : Here, we need to check all three sub cases : i) LR section has 5 questions; (ii) LR section has 7 questions; (iii) LR section has 8 questions.
(i) LR section has 5 questions : Total marks = $36 + 21 + 10 + 24 = 91$ (invalid)
(ii) LR section has 7 questions : Total marks = $36 + 24 + 14 + 15 = 89$ (invalid)
(iii) LR section has 8 questions : Total marks = $36 + 21 + 16 + 15 = 88$ (invalid)

Thus, QA section has 8 questions; DI and RC section has either 9 or 7 questions in any order; LR Section has 5 questions.

The final table will be as follows:

Section	Marks per question	Questions per section	Total marks	Time per question (minutes)	Total time
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LR	2	5	10	3	15
VA	5	6	30	2	12
RC	3	9/7	27/21	$2 + 1 = 3$	27/21

QA section had 8 questions.
Hence, [3].

Correct Answer: ▼

Time taken by you: 4 secs

Avg Time taken by all students: 24 secs

Your Attempt: Correct

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In a village in Mesopotamian civilization, only three items i.e., grains, cooking oil and pottery are traded and bronze coins are used as money. There is only one trader in the village who transacts these three items with the common people (i.e., buys from the common people and sells to the common people) by exchanging bronze coins. The base exchange rate of an item is the weight of the bronze coins (in kg), which are equivalent in value to one kg of the item being traded. The trader buys items at buying exchange rates that are lower than the base exchange rates, and sells the items at selling exchange rates that are higher than the base exchange rates.

The base exchange rates (in terms of kg of bronze coins) for per kg of grains, cooking oil and pottery are in the ratio 12 : 50 : 45. The trader would offer 10% less weight of bronze coins than the base exchange rate for buying any of the three items from the common people. Further, the trader would charge 20% more weight of bronze coins than the base exchange rate for selling any of the three items to the common people. The trader had enough bronze coins and the three types of items for the exchange on any day.

The following points are known about the exchange of items on a particular day.

1. At the time of opening of the market in the morning, the trader had 90,000 kg grains, 50,000 kg cooking oil and 6,000 kg pottery.
2. At the time of closing of the market in the evening, the trader had 75,000 kg grains, 55,000 kg cooking oil and 6,000 kg pottery.
3. The weight of the bronze coins paid by the trader to buy cooking oil was same as the weight of the bronze coins received by the trader by selling cooking oil on that day.
4. The weight of the bronze coins paid by the trader to buy grains and that paid by him to buy pottery was in the ratio 7 : 6.
5. The weight of the bronze coins received by the trader by selling grains and that by selling pottery was in the ratio 2 : 1.
6. The weight of the bronze coins received by the trader by selling grains was 43,200 Kg.

1) How many kilograms of cooking oil was bought by the trader from the common people on that day? —

- ☐ 15,000 kg
- ☐ 18,000 kg
- ☐ 20,000 kg
- ☐ 24,000 kg

Video Explanation:



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In a village in Mesopotamian civilization, only three items i.e., grains, cooking oil and pottery are traded and bronze coins are used as money. There is only one trader in the village who transacts these three items with the common people (i.e., buys from the common people and sells to the common people) by exchanging bronze coins. The base exchange rate of an item is the weight of the bronze coins (in kg), which are equivalent in value to one kg of the item being traded. The trader buys items at buying exchange rates that are lower than the base exchange rates, and sells the items at selling exchange rates that are higher than the base exchange rates.

The base exchange rates (in terms of kg of bronze coins) for per kg of grains, cooking oil and pottery are in the ratio 12 : 50 : 45. The trader would offer 10% less weight of bronze coins than the base exchange rate for buying any of the three items from the common people. Further, the trader would charge 20% more weight of bronze coins than the base exchange rate for selling any of the three items to the common people. The trader had enough bronze coins and the three types of items for the exchange on any day.

The following points are known about the exchange of items on a particular day.

- At the time of opening of the market in the morning, the trader had 90,000 kg grains, 50,000 kg cooking oil and 6,000 kg pottery.
- At the time of closing of the market in the evening, the trader had 75,000 kg grains, 55,000 kg cooking oil and 6,000 kg pottery.
- The weight of the bronze coins paid by the trader to buy cooking oil was same as the weight of the bronze coins received by the trader by selling cooking oil on that day.
- The weight of the bronze coins paid by the trader to buy grains and that paid by him to buy pottery was in the ratio 7 : 6.
- The weight of the bronze coins received by the trader by selling grains and that by selling pottery was in the ratio 2 : 1.
- The weight of the bronze coins received by the trader by selling grains was 43,200 Kg.

Let the weight of bronze coins exchanged for the weight of grains, cooking oil and pottery per kg be (12x), (50x) and (45x) respectively. The weight of bronze coins trader offers while buying and selling each item can be tabulated as:

	Weight of bronze coins (in kg) paid while buying one kg of an item	Weight of bronze coins (in kg) received while selling one kg of an item
Grains	$(12x)(0.9) = 10.8x$	$(12x)(1.2) = 14.4x$
Cooking Oil	$(50x)(0.9) = 45x$	$(50x)(1.2) = 60x$
Pottery	$(45x)(0.9) = 40.5x$	$(45x)(1.2) = 54x$

Using point 1 and point 2, if the trader sold ‘a’ kg of cooking oil, then cooking oil bought was (a + 5000) kg.
Using point 3, we get the following equation: $60xa = (a + 5000)45x$, thus we get, $a = 15,000$ kg.
So the quantity of cooking oil bought was 20,000 kg.
Using point 1 and point 2, if the trader bought ‘b’ kg of grains, then grains sold was (b + 15000).
Let the weight of pottery that was bought as well as sold be ‘c’ kg.

Using point 1 and point 2, if the trader bought ‘b’ kg of grains, then grains sold was (b + 15000) kg.
Let the weight of pottery that was bought as well as sold be ‘c’ kg.

Using point 4, $\frac{10.8 \times b}{40.5 \times c} = \frac{7}{6}$, solving this we get, $b = \frac{35}{8}c$

Using point 5, $\frac{(14.4x)(b + 15000)}{54 \times c} = \frac{2}{1}$,

Substituting $b = \frac{35}{8}c$ in the above equation and solving for ‘c’, we get $c = 4800$

Therefore $b = \frac{35 \times 4800}{8} = 21000$

Grains bought by the trader = 21,000 kg
Grains sold by the trader = (21000 + 15000) = 36,000 kg
Pottery bought and sold by the trader = 4,800 kg
Using point 6:
 $36000 \times (14.4x) = 43,200$ kg

Solving this we get, $x = \frac{1}{12}$

Therefore, the exchange rate of 1 kg of grains = $\frac{12}{12} = 1$ kg bronze coins

The exchange rate of 1 kg of cooking oil = $\frac{50}{12} = 4.1667$ kg bronze coins

The exchange rate of 1 kg of pottery = $\frac{45}{12} = 3.75$ kg bronze coins

The trader bought 20,000 kg of cooking oil. Hence, [3].

Correct Answer:

Time taken by you: 0 secs

Avg Time taken by all students: 451 secs

% Students got it correct: 73 %

Refer to the data below and answer the questions that follow.

In a village in Mesopotamian civilization, only three items i.e., grains, cooking oil and pottery are traded and bronze coins are used as money. There is only one trader in the village who transacts these three items with the common people (i.e., buys from the common people and sells to the common people) by exchanging bronze coins. The base exchange rate of an item is the weight of the bronze coins (in kg), which are equivalent in value to one kg of the item being traded. The trader buys items at buying exchange rates that are lower than the base exchange rates, and sells the items at selling exchange rates that are higher than the base exchange rates.

The base exchange rates (in terms of kg of bronze coins) for per kg of grains, cooking oil and pottery are in the ratio 12 : 50 : 45. The trader would offer 10% less weight of bronze coins than the base exchange rate for buying any of the three items from the common people. Further, the trader would charge 20% more weight of bronze coins than the base exchange rate for selling any of the three items to the common people. The trader had enough bronze coins and the three types of items for the exchange on any day.

The following points are known about the exchange of items on a particular day.

1. At the time of opening of the market in the morning, the trader had 90,000 kg grains, 50,000 kg cooking oil and 6,000 kg pottery.
2. At the time of closing of the market in the evening, the trader had 75,000 kg grains, 55,000 kg cooking oil and 6,000 kg pottery.
3. The weight of the bronze coins paid by the trader to buy cooking oil was same as the weight of the bronze coins received by the trader by selling cooking oil on that day.
4. The weight of the bronze coins paid by the trader to buy grains and that paid by him to buy pottery was in the ratio 7 : 6.
5. The weight of the bronze coins received by the trader by selling grains and that by selling pottery was in the ratio 2 : 1.
6. The weight of the bronze coins received by the trader by selling grains was 43,200 Kg.

2) How many kilograms of pottery was sold by the trader to the common people on that day?

- ☐ 2,400 kg
- ☐ 3,000 kg
- ☐ 3,600 kg
- ☐ 4,800 kg

Video Explanation: ▼

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2. At the time of closing of the market in the evening, the trader had 75,000 kg grains, 55,000 kg cooking oil and 6,000 kg pottery.
3. The weight of the bronze coins paid by the trader to buy cooking oil was same as the weight of the bronze coins received by the trader by selling cooking oil on that day.
4. The weight of the bronze coins paid by the trader to buy grains and that paid by him to buy pottery was in the ratio 7 : 6.
5. The weight of the bronze coins received by the trader by selling grains and that by selling pottery was in the ratio 2 : 1.
6. The weight of the bronze coins received by the trader by selling grains was 43,200 Kg.

Let the weight of bronze coins exchanged for the weight of grains, cooking oil and pottery per kg be (12x), (50x) and (45x) respectively. The weight of bronze coins trader offers while buying and selling each item can be tabulated as:

	Weight of bronze coins (in kg) paid while buying one kg of an item	Weight of bronze coins (in kg) received while selling one kg of an item
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Using point 1 and point 2, if the trader sold ‘a’ kg of cooking oil, then cooking oil bought was (a + 5000) kg.
Using point 3, we get the following equation: $60xa = (a + 5000)45x$, thus we get, $a = 15,000$ kg.
So the quantity of cooking oil bought was 20,000 kg.
Using point 1 and point 2, if the trader bought ‘b’ kg of grains, then grains sold was (b + 15000).
Let the weight of pottery that was bought as well as sold be ‘c’ kg.

Using point 1 and point 2, if the trader bought ‘b’ kg of grains, then grains sold was (b + 15000) kg.
Let the weight of pottery that was bought as well as sold be ‘c’ kg.

Using point 4, $\frac{10.8xb}{40.5xc} = \frac{7}{6}$, solving this we get, $b = \frac{35}{8}c$

Using point 5, $\frac{(14.4x)(b + 15000)}{54xc} = \frac{2}{1}$,

Substituting $b = \frac{35}{8}c$ in the above equation and solving for ‘c’, we get $c = 4800$

Therefore $b = \frac{35 \times 4800}{8} = 21000$

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Grains sold by the trader = (21000 + 15000) = 36,000 kg
Pottery bought and sold by the trader = 4,800 kg
Using point 6:
 $36000 \times (14.4x) = 43,200$ kg

Solving this we get, $x = \frac{1}{12}$

Therefore, the exchange rate of 1 kg of grains = $\frac{12}{12} = 1$ kg bronze coins

The exchange rate of 1 kg of cooking oil = $\frac{50}{12} = 4.1667$ kg bronze coins

The exchange rate of 1 kg of pottery = $\frac{45}{12} = 3.75$ kg bronze coins

On that day, 4,800 kg of pottery was sold. Hence, [4].

Correct Answer:

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In a village in Mesopotamian civilization, only three items i.e., grains, cooking oil and pottery are traded and bronze coins are used as money. There is only one trader in the village who transacts these three items with the common people (i.e., buys from the common people and sells to the common people) by exchanging bronze coins. The base exchange rate of an item is the weight of the bronze coins (in kg), which are equivalent in value to one kg of the item being traded. The trader buys items at buying exchange rates that are lower than the base exchange rates, and sells the items at selling exchange rates that are higher than the base exchange rates.

The base exchange rates (in terms of kg of bronze coins) for per kg of grains, cooking oil and pottery are in the ratio 12 : 50 : 45. The trader would offer 10% less weight of bronze coins than the base exchange rate for buying any of the three items from the common people. Further, the trader would charge 20% more weight of bronze coins than the base exchange rate for selling any of the three items to the common people. The trader had enough bronze coins and the three types of items for the exchange on any day.

The following points are known about the exchange of items on a particular day.

1. At the time of opening of the market in the morning, the trader had 90,000 kg grains, 50,000 kg cooking oil and 6,000 kg pottery.
2. At the time of closing of the market in the evening, the trader had 75,000 kg grains, 55,000 kg cooking oil and 6,000 kg pottery.
3. The weight of the bronze coins paid by the trader to buy cooking oil was same as the weight of the bronze coins received by the trader by selling cooking oil on that day.
4. The weight of the bronze coins paid by the trader to buy grains and that paid by him to buy pottery was in the ratio 7 : 6.
5. The weight of the bronze coins received by the trader by selling grains and that by selling pottery was in the ratio 2 : 1.
6. The weight of the bronze coins received by the trader by selling grains was 43,200 Kg.

Your Attempt: Skipped

% Students got it correct: 49 %

3) What was the base rate of exchange (in kg) of bronze coins for one kg of grains? —

- ☐ 1 kg
- ☐ 1.25 kg
- ☐ 1.75 kg
- ☐ 2.25 kg

Video Explanation: ▼

Refer to the data below and answer the questions that follow.

In a village in Mesopotamian civilization, only three items i.e., grains, cooking oil and pottery are traded and bronze coins are used as money. There is only one trader in the village who transacts these three items with the common people (i.e., buys from the common people and sells to the common people) by exchanging bronze coins. The base exchange rate of an item is the weight of the bronze coins (in kg), which are equivalent in value to one kg of the item being traded. The trader buys items at buying exchange rates that are lower than the base exchange rates, and sells the items at selling exchange rates that are higher than the base exchange rates.

The base exchange rates (in terms of kg of bronze coins) for per kg of grains, cooking oil and pottery are in the ratio 12 : 50 : 45. The trader would offer 10% less weight of bronze coins than the base exchange rate for buying any of the three items from the common people. Further, the trader would charge 20% more weight of bronze coins than the base exchange rate for selling any of the three items to the common people. The trader had enough bronze coins and the three types of items for the exchange on any day.

The following points are known about the exchange of items on a particular day.

- At the time of opening of the market in the morning, the trader had 90,000 kg grains, 50,000 kg cooking oil and 6,000 kg pottery.
- At the time of closing of the market in the evening, the trader had 75,000 kg grains, 55,000 kg cooking oil and 6,000 kg pottery.
- The weight of the bronze coins paid by the trader to buy cooking oil was same as the weight of the bronze coins received by the trader by selling cooking oil on that day.
- The weight of the bronze coins paid by the trader to buy grains and that paid by him to buy pottery was in the ratio 7 : 6.
- The weight of the bronze coins received by the trader by selling grains and that by selling pottery was in the ratio 2 : 1.
- The weight of the bronze coins received by the trader by selling grains was 43,200 Kg.

Let the weight of bronze coins exchanged for the weight of grains, cooking oil and pottery per kg be (12x), (50x) and (45x) respectively. The weight of bronze coins trader offers while buying and selling each item can be tabulated as:

	Weight of bronze coins (in kg) paid while buying one kg of an item	Weight of bronze coins (in kg) received while selling one kg of an item
Grains	$(12x)(0.9) = 10.8x$	$(12x)(1.2) = 14.4x$
Cooking Oil	$(50x)(0.9) = 45x$	$(50x)(1.2) = 60x$
Pottery	$(45x)(0.9) = 40.5x$	$(45x)(1.2) = 54x$

Using point 1 and point 2, if the trader sold ‘a’ kg of cooking oil, then cooking oil bought was (a + 5000) kg.
Using point 3, we get the following equation: $60xa = (a + 5000)45x$, thus we get, $a = 15,000$ kg.
So the quantity of cooking oil bought was 20,000 kg.
Using point 1 and point 2, if the trader bought ‘b’ kg of grains, then grains sold was (b + 15000).
Let the weight of pottery that was bought as well as sold be ‘c’ kg.

Using point 1 and point 2, if the trader bought ‘b’ kg of grains, then grains sold was (b + 15000) kg.
Let the weight of pottery that was bought as well as sold be ‘c’ kg.

Using point 4, $\frac{10.8xb}{40.5xc} = \frac{7}{6}$, solving this we get, $b = \frac{35}{8}c$

Using point 5, $\frac{(14.4x)(b + 15000)}{54xc} = \frac{2}{1}$,

Substituting $b = \frac{35}{8}c$ in the above equation and solving for ‘c’, we get $c = 4800$

Therefore $b = \frac{35 \times 4800}{8} = 21000$

Grains bought by the trader = 21,000 kg
Grains sold by the trader = (21000 + 15000) = 36,000 kg
Pottery bought and sold by the trader = 4,800 kg
Using point 6:
 $36000 \times (14.4x) = 43,200$ kg

Solving this we get, $x = \frac{1}{12}$

Therefore, the exchange rate of 1 kg of grains = $\frac{12}{12} = 1$ kg bronze coins

The exchange rate of 1 kg of cooking oil = $\frac{50}{12} = 4.1667$ kg bronze coins

The exchange rate of 1 kg of pottery = $\frac{45}{12} = 3.75$ kg bronze coins

The base rate of exchange for one kg of grains = 1 kg bronze coins. Hence, [1].

Correct Answer:

Refer to the data below and answer the questions that follow.

In a village in Mesopotamian civilization, only three items i.e., grains, cooking oil and pottery are traded and bronze coins are used as money. There is only one trader in the village who transacts these three items with the common people (i.e., buys from the common people and sells to the common people) by exchanging bronze coins. The base exchange rate of an item is the weight of the bronze coins (in kg), which are equivalent in value to one kg of the item being traded. The trader buys items at buying exchange rates that are lower than the base exchange rates, and sells the items at selling exchange rates that are higher than the base exchange rates.

The base exchange rates (in terms of kg of bronze coins) for per kg of grains, cooking oil and pottery are in the ratio 12 : 50 : 45. The trader would offer 10% less weight of bronze coins than the base exchange rate for buying any of the three items from the common people. Further, the trader would charge 20% more weight of bronze coins than the base exchange rate for selling any of the three items to the common people. The trader had enough bronze coins and the three types of items for the exchange on any day.

The following points are known about the exchange of items on a particular day.

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- At the time of closing of the market in the evening, the trader had 75,000 kg grains, 55,000 kg cooking oil and 6,000 kg pottery.
- The weight of the bronze coins paid by the trader to buy cooking oil was same as the weight of the bronze coins received by the trader by selling cooking oil on that day.
- The weight of the bronze coins paid by the trader to buy grains and that paid by him to buy pottery was in the ratio 7 : 6.
- The weight of the bronze coins received by the trader by selling grains and that by selling pottery was in the ratio 2 : 1.
- The weight of the bronze coins received by the trader by selling grains was 43,200 Kg.

Time taken by you: 0 secs

Avg Time taken by all students: 71 secs

Your Attempt: Skipped

% Students got it correct: 50 %

4) Find the weight of the bronze coins received by the trader by selling cooking oil on that day.

- ☐ 60,000 kg
- ☐ 75,000 kg
- ☐ 80,000 kg
- ☐ 90,000 kg

Video Explanation: 

Explanation: 

Let the weight of bronze coins exchanged for the weight of grains, cooking oil and pottery per kg be (12x), (50x) and (45x) respectively. The weight of bronze coins trader offers while buying and selling each item can be tabulated as:

	Weight of bronze coins (in kg) paid while buying one kg of an item	Weight of bronze coins (in kg) received while selling one kg of an item
Grains	$(12x)(0.9) = 10.8x$	$(12x)(1.2) = 14.4x$
Cooking Oil	$(50x)(0.9) = 45x$	$(50x)(1.2) = 60x$
Pottery	$(45x)(0.9) = 40.5x$	$(45x)(1.2) = 54x$

Using point 1 and point 2, if the trader sold ‘a’ kg of cooking oil, then cooking oil bought was (a + 5000) kg.
Using point 3, we get the following equation: $60xa = (a + 5000)45x$, thus we get, $a = 15,000$ kg.
So the quantity of cooking oil bought was 20,000 kg.
Using point 1 and point 2, if the trader bought ‘b’ kg of grains, then grains sold was (b + 15000).
Let the weight of pottery that was bought as well as sold be ‘c’ kg.

Refer to the data below and answer the questions that follow.

In a village in Mesopotamian civilization, only three items i.e., grains, cooking oil and pottery are traded and bronze coins are used as money. There is only one trader in the village who transacts these three items with the common people (i.e., buys from the common people and sells to the common people) by exchanging bronze coins. The base exchange rate of an item is the weight of the bronze coins (in kg), which are equivalent in value to one kg of the item being traded. The trader buys items at buying exchange rates that are lower than the base exchange rates, and sells the items at selling exchange rates that are higher than the base exchange rates.

The base exchange rates (in terms of kg of bronze coins) for per kg of grains, cooking oil and pottery are in the ratio 12 : 50 : 45. The trader would offer 10% less weight of bronze coins than the base exchange rate for buying any of the three items from the common people. Further, the trader would charge 20% more weight of bronze coins than the base exchange rate for selling any of the three items to the common people. The trader had enough bronze coins and the three types of items for the exchange on any day.

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2. At the time of closing of the market in the evening, the trader had 75,000 kg grains, 55,000 kg cooking oil and 6,000 kg pottery.
3. The weight of the bronze coins paid by the trader to buy cooking oil was same as the weight of the bronze coins received by the trader by selling cooking oil on that day.
4. The weight of the bronze coins paid by the trader to buy grains and that paid by him to buy pottery was in the ratio 7 : 6.
5. The weight of the bronze coins received by the trader by selling grains and that by selling pottery was in the ratio 2 : 1.
6. The weight of the bronze coins received by the trader by selling grains was 43,200 Kg.

Using point 1 and point 2, if the trader bought 1 kg of grains, he would have received 12 kg of bronze coins. Let the weight of pottery that was bought as x kg.

Using point 4, $\frac{10.8 \times b}{40.5 \times c} = \frac{7}{6}$, solving this we get, $b = \frac{35}{8}c$

Using point 5, $\frac{(14.4x)(b + 15000)}{54 \times c} = \frac{2}{1}$,

Substituting $b = \frac{35}{8}c$ in the above equation and solving for 'c', we get $c = 4800$

Therefore $b = \frac{35 \times 4800}{8} = 21000$

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Grains sold by the trader = (21000 + 15000) = 36,000 kg
Pottery bought and sold by the trader = 4,800 kg
Using point 6:
 $36000 \times (14.4x) = 43,200$ kg

Solving this we get, $x = \frac{1}{12}$

Therefore, the exchange rate of 1 kg of grains = $\frac{12}{12} = 1$ kg bronze coins

The exchange rate of 1 kg of cooking oil = $\frac{50}{12} = 4.1667$ kg bronze coins

The exchange rate of 1 kg of pottery = $\frac{45}{12} = 3.75$ kg bronze coins

On that particular day, the trader sold 15,000 kg of cooking oil.
Therefore, the weight of bronze coins received in this transaction = $15000 \times \frac{60}{12} = 75,000$ kg

Hence, [2].

Correct Answer:

Time taken by you: 0 secs

Avg Time taken by all students: 57 secs

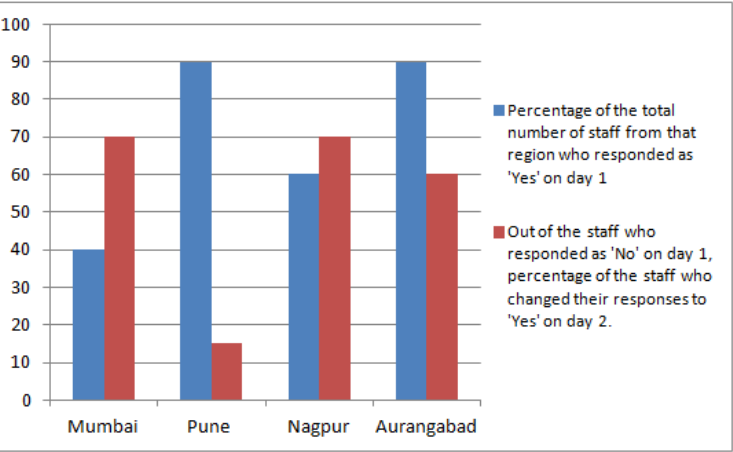
Your Attempt: Skipped

% Students got it correct: 53 %

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Refer to the data below and answer the questions that follow.

IMS Pvt. Ltd. organized an annual picnic for which all its staff members had to register their responses (on day 1) as 'Yes' or 'No' i.e. whether they did/ did not want to attend the picnic. The staff members were allowed to change their responses (i.e., from 'Yes' to 'No' or from 'No' to 'Yes') if they wished to change their responses. However, they could change their responses only once on day 2. The following bar chart gives information about the responses of the staff from 4 different regions where IMS runs its operations.



The total number of staff members in each of Mumbai and Aurangabad regions was 800 while that in Pune and Nagpur was 600 and 700 respectively. For Mumbai, Pune, Nagpur and Aurangabad; out of the staff who responded as 'Yes' on day 1; percentage of the staff who changed their responses to 'No' on day 2 is 60%, 50%, 70% and 60% respectively.

1) How many final responses from Pune were registered as 'Yes'?

Enter your response (as an integer) using the virtual keyboard in the box provided below.

279

Video Explanation:

Explanation:

For Mumbai,
Day 1: Number of staff members who responded as 'Yes' = $0.4 \times 800 = 320$
Number of staff members who responded as 'No' = 480
Day 2: Number of staff members who changed from 'No' on day 1 to 'Yes' on day 2 = $0.7 \times 480 = 336$
Number of staff members who changed from 'Yes' on day 1 to 'No' on day 2 = $0.6 \times 320 = 192$
Final number of 'Yes' responses = $320 - 192 + 336 = 464$
Final number of 'No' responses = $480 - 336 + 192 = 336$

For Pune,
Day 1: Number of staff members who responded as 'Yes' = $0.9 \times 600 = 540$
Number of staff members who responded as 'No' = 60
Day 2: Number of staff members who changed from 'No' on day 1 to 'Yes' on day 2 = $0.15 \times 60 = 9$
Number of staff members who changed from 'Yes' on day 1 to 'No' on day 2 = $0.5 \times 540 = 270$
Final number of 'Yes' responses = $540 - 270 + 9 = 279$
Final number of 'No' responses = $60 - 9 + 270 = 321$

Similarly the final number of 'Yes' and 'No' responses for the other regions can be calculated and the final results can be tabulated as follows:

	Yes	No
Mumbai	464	336
Pune	279	321
Nagpur	322	378
Aurangabad	336	464

Thus, the required answer is 279.

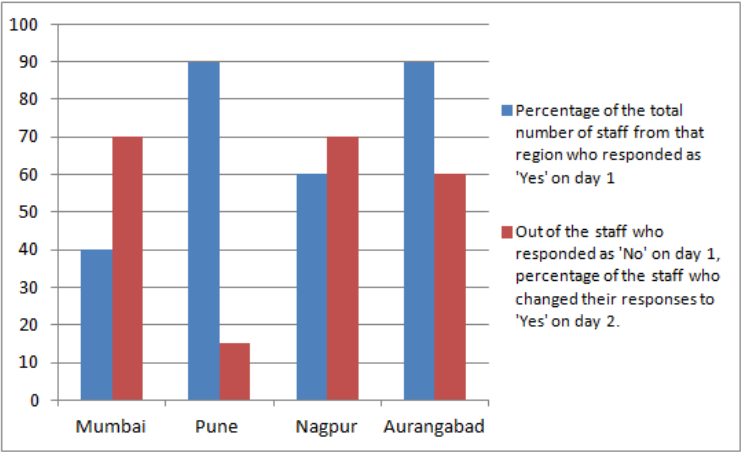
Correct Answer:

Time taken by you: 459 secs

Avg Time taken by all students: 441 secs

Refer to the data below and answer the questions that follow.

IMS Pvt. Ltd. organized an annual picnic for which all its staff members had to register their responses (on day 1) as ‘Yes’ or ‘No’ i.e. whether they did/ did not want to attend the picnic. The staff members were allowed to change their responses (i.e., from ‘Yes’ to ‘No’ or from ‘No’ to ‘Yes’) if they wished to change their responses. However, they could change their responses only once on day 2. The following bar chart gives information about the responses of the staff from 4 different regions where IMS runs its operations.



The total number of staff members in each of Mumbai and Aurangabad regions was 800 while that in Pune and Nagpur was 600 and 700 respectively. For Mumbai, Pune, Nagpur and Aurangabad; out of the staff who responded as ‘Yes’ on day 1; percentage of the staff who changed their responses to ‘No’ on day 2 is 60%, 50%, 70% and 60% respectively.

% Students got it correct: **76 %**

2) What is the difference between the number of final ‘Yes’ response from Mumbai and Aurangabad?

Enter your response (as an integer) using the virtual keyboard in the box provided below

128

Video Explanation:

Explanation:

For Mumbai,
Day 1: Number of staff members who responded as ‘Yes’ = $0.4 \times 800 = 320$
Number of staff members who responded as ‘No’ = 480
Day 2: Number of staff members who changed from ‘No’ on day 1 to ‘Yes’ on day 2 = $0.7 \times 480 = 336$
Number of staff members who changed from ‘Yes’ on day 1 to ‘No’ on day 2 = $0.6 \times 320 = 192$
Final number of ‘Yes’ responses = $320 - 192 + 336 = 464$
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Final number of ‘Yes’ responses = $540 - 270 + 9 = 279$
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	Yes	No
Mumbai	464	336
Pune	279	321
Nagpur	322	378
Aurangabad	336	464

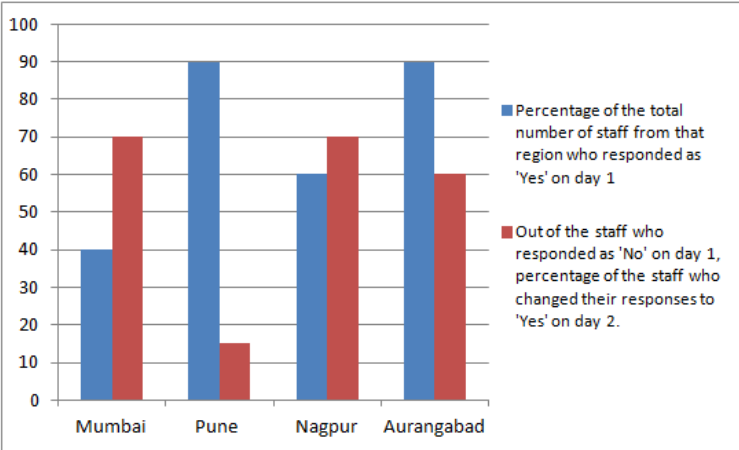
The required difference is = $464 - 336 = 128$.
Therefore, the required answer is 128.

Correct Answer:

Time taken by you: **35 secs**

Refer to the data below and answer the questions that follow.

IMS Pvt. Ltd. organized an annual picnic for which all its staff members had to register their responses (on day 1) as ‘Yes’ or ‘No’ i.e. whether they did/ did not want to attend the picnic. The staff members were allowed to change their responses (i.e., from ‘Yes’ to ‘No’ or from ‘No’ to ‘Yes’) if they wished to change their responses. However, they could change their responses only once on day 2. The following bar chart gives information about the responses of the staff from 4 different regions where IMS runs its operations.



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Your Attempt: **Correct**

% Students got it correct: **64 %**

3) For which city the number of final responses was registered as ‘No’ was the least?

- ☐ Mumbai
- ☒ Pune
- ☐ Nagpur
- ☐ Aurangabad

Video Explanation:

Explanation:

For Mumbai,
Day 1: Number of staff members who responded as ‘Yes’
= $0.4 \times 800 = 320$
Number of staff members who responded as ‘No’ = 480
Day 2: Number of staff members who changed from ‘No’
on day 1 to ‘Yes’ on day 2 = $0.7 \times 480 = 336$
Number of staff members who changed from ‘Yes’ on day
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Number of staff members who responded as ‘No’ = 60
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Final number of ‘No’ responses = $60 - 9 + 270 = 321$

Similarly the final number of ‘Yes’ and ‘No’ responses for the other regions can be calculated and the final results can be tabulated as follows:

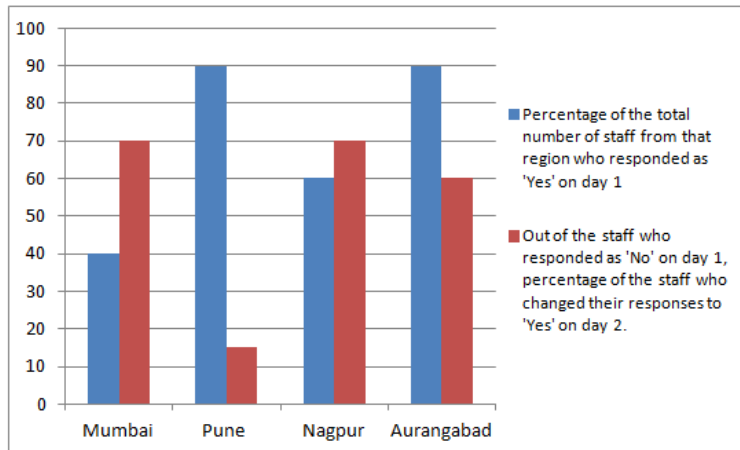
	Yes	No
Mumbai	464	336
Pune	279	321
Nagpur	322	378
Aurangabad	336	464

Hence, [2].

Correct Answer:

Refer to the data below and answer the questions that follow.

IMS Pvt. Ltd. organized an annual picnic for which all its staff members had to register their responses (on day 1) as 'Yes' or 'No' i.e. whether they did/ did not want to attend the picnic. The staff members were allowed to change their responses (i.e., from 'Yes' to 'No' or from 'No' to 'Yes') if they wished to change their responses. However, they could change their responses only once on day 2. The following bar chart gives information about the responses of the staff from 4 different regions where IMS runs its operations.



The total number of staff members in each of Mumbai and Aurangabad regions was 800 while that in Pune and Nagpur was 600 and 700 respectively. For Mumbai, Pune, Nagpur and Aurangabad; out of the staff who responded as 'Yes' on day 1; percentage of the staff who changed their responses to 'No' on day 2 is 60%, 50%, 70% and 60% respectively.

Time taken by you: 46 secs

Avg Time taken by all students: 97 secs

Your Attempt: **Correct**

% Students got it correct: **76 %**

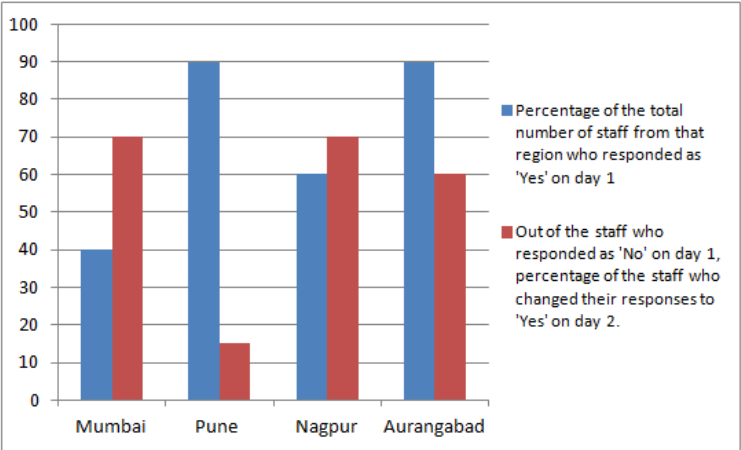
4) The staff members going for the picnic had to share their rooms, with 4 people in each room. Also, a person does not share a room with anyone who is not from his/her region. Then what is the minimum number of rooms that IMS must book?

- ☐ 268
- ☐ 326
- ☒ 351 ✓
- ☐ 386

Video Explanation:

Refer to the data below and answer the questions that follow.

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Similarly the final number of ‘Yes’ and ‘No’ responses for the other regions can be calculated and the final results can be tabulated as follows:

	Yes	No
Mumbai	464	336
Pune	279	321
Nagpur	322	378
Aurangabad	336	464

Rooms required for Mumbai staff = $464/4 = 116$
Rooms required for Pune staff = $279/4 = 69.75$ i.e. 70
Rooms required for Nagpur staff = $322/4 = 80.5$ i.e., 81
Rooms required for Aurangabad staff = $336/4 = 84$
Total number of rooms required = $116 + 70 + 81 + 84 = 351$.
Hence, [3].

Correct Answer:

Time taken by you: 73 secs

Avg Time taken by all students: 123 secs

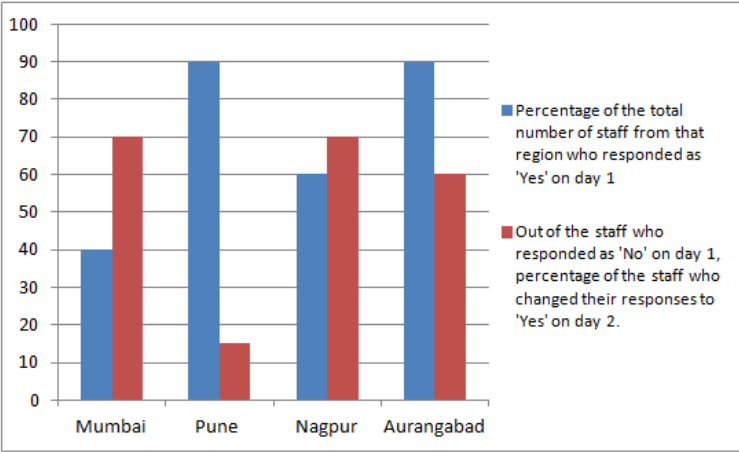
Your Attempt: Correct

% Students got it correct: 80 %

Refer to the data below and answer the questions that follow.

loading...

IMS Pvt. Ltd. organized an annual picnic for which all its staff members had to register their responses (on day 1) as 'Yes' or 'No' i.e. whether they did/ did not want to attend the picnic. The staff members were allowed to change their responses (i.e., from 'Yes' to 'No' or from 'No' to 'Yes') if they wished to change their responses. However, they could change their responses only once on day 2. The following bar chart gives information about the responses of the staff from 4 different regions where IMS runs its operations.



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Refer to the data below and answer the questions that follow.

Smartkids playschool is planning to distribute chocolates among the children of the school on the occasion of the Foundation day of the school. The school administration has bought three types of chocolates: Caramel, Dark Chocolate and Crunchy Bar. The prices of these three types of chocolates are Rs. 5, Rs. 10 and Rs. 20 respectively. Each class has at least 10 students and each student gets exactly one chocolate. The distribution of chocolates is to be done in such a way that each class must get chocolates worth Rs. 200.

1) The nursery class has fewer than 15 children and the __ children in the class get more Crunchy Bars chocolates than any other type of chocolates. In how many different ways can the chocolates be distributed to the children in the class?

- ☐ 7
- ☐ 8
- ☐ 9
- ☐ 10

Video Explanation: ▼

Explanation: ▼

Let ‘a’ be the number of Crunchy Bars, ‘b’ be the number of Dark Chocolates and ‘c’ be the number of Caramel chocolates.
We have, $10 \leq a + b + c < 15$ and $b, c < a$
Also, $20a + 10b + 5c = 200$ or $4a + 2b + c = 40$

Consider $a + b + c = 10$ and $4a + 2b + c = 40$
Therefore, $3a + b = 30$
 $3a + b = 30 \Rightarrow (a, b) = (10, 0), (9, 3), (8, 6), \dots$ and so on.
But $(a + b)$ cannot be greater than 10.
So, the only possibility in this case is $(a, b, c) = (10, 0, 0)$

Consider $a + b + c = 11$ and $4a + 2b + c = 40$
Therefore, $3a + b = 29$
 $3a + b = 29 \Rightarrow (a, b) = (9, 2), (8, 5), \dots$ and so on.
But $(a + b)$ cannot be greater than 11.
So, the only possibility in this case is $(a, b, c) = (9, 2, 0)$

Consider $a + b + c = 12$ and $4a + 2b + c = 40$
Therefore, $3a + b = 28$
 $3a + b = 28 \Rightarrow (a, b) = (9, 1), (8, 4), (7, 7) \dots$ and so on.
But $(a + b)$ cannot be greater than 12.
So, the only possibility in this case is $(a, b, c) = (9, 1, 2)$ and $(8, 4, 0)$

Working on similar lines we get following:

a	10	9	9	9	8	8	8	7	7
b	0	2	1	0	4	3	2	6	5
c	0	0	2	4	0	2	4	0	2

There are nine solutions.
Hence, [3].

Refer to the data below and answer the questions that follow.

Smartkids playschool is planning to distribute chocolates among the children of the school on the occasion of the Foundation day of the school. The school administration has bought three types of chocolates: Caramel, Dark Chocolate and Crunchy Bar. The prices of these three types of chocolates are Rs. 5, Rs. 10 and Rs. 20 respectively. Each class has at least 10 students and each student gets exactly one chocolate. The distribution of chocolates is to be done in such a way that each class must get chocolates worth Rs. 200.

Time taken by you: **0 secs**

Avg Time taken by all students: **158 secs**

Your Attempt: **Skipped**

% Students got it correct: **33 %**

- 2) The Junior-KG class has more than 15 children and the children in the class get more Crunchy Bars chocolates than any other type of chocolates. What is the number of Crunchy Bars chocolates distributed in the class?**

Enter your response (as an integer) using the virtual keyboard in the box provided below.

Video Explanation:

Explanation:

Let 'a' be the number of Crunchy Bars, 'b' be the number of Dark Chocolates and 'c' be the number of Caramel chocolates.

Here, we have two following conditions:

$$a + b + c > 15$$

$$20a + 10b + 5c = 200 \text{ or } 4a + 2b + c = 40 \text{ and } (a > b, c)$$

$$\therefore 3a + b \leq 24$$

For $3a + b = 24 \Rightarrow (a, b) = (8, 0), (7, 3), (6, 6)$ and so on.

Therefore, $(a, b, c) = (8, 0, 8), (7, 3, 6), (6, 6, 4)$ and so on.

As $a > b, c$; the only valid solution in this case is $(a, b, c) = (7, 3, 6)$

We can further check that there is no valid solution for $a + b + c = 17, 18, \dots$

Thus, there is only one possible solution:

$$a = 7, b = 3, c = 6$$

Therefore, the required answer is 7.

Correct Answer:

Time taken by you: **0 secs**

Refer to the data below and answer the questions that follow.

Smartkids playschool is planning to distribute chocolates among the children of the school on the occasion of the Foundation day of the school. The school administration has bought three types of chocolates: Caramel, Dark Chocolate and Crunchy Bar. The prices of these three types of chocolates are Rs. 5, Rs. 10 and Rs. 20 respectively. Each class has at least 10 students and each student gets exactly one chocolate. The distribution of chocolates is to be done in such a way that each class must get chocolates worth Rs. 200.

Your Attempt: Skipped

% Students got it correct: 52 %

3) The Senior-KG class has 20 children and the children in the class get more chocolates of type Dark Chocolate than any other type of chocolates. In how many different ways can the chocolates be distributed to the children in the class?

- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7

Video Explanation: 

Explanation: 

Let 'a' be the number of Crunchy Bars, 'b' be the number of Dark Chocolates and 'c' be the number of Caramel chocolates.
Here, we have two following conditions:
 $a + b + c = 20$ and $(b > a, c) \Rightarrow b \geq 7$
 $20a + 10b + 5c = 200$ or $4a + 2b + c = 40$
Therefore $3a + b = 20$
 $\therefore (20 - b)$ is divisible by 3. As $b \geq 7$, $b = 8, 11, 14, 17, 20$

Thus, the chocolates can be distributed in Senior-KG class as:

1. All 20 Dark Chocolates.
2. 17 Dark Chocolates, 1 Crunchy Bar and 2 Caramel chocolates.
3. 14 Dark Chocolates, 2 Crunchy Bars and 4 Caramel chocolates.
4. 11 Dark Chocolates, 3 Crunchy Bars and 6 Caramel chocolates.
5. 8 Dark Chocolates, 4 Crunchy Bars and 8 Caramel chocolates (it violates the condition that the class gets more Dark Chocolates than any other type chocolates).

So there are total 4 ways.
Hence, [1].

Correct Answer: 

Time taken by you: 0 secs

Refer to the data below and answer the questions that follow.

Smartkids playschool is planning to distribute chocolates among the children of the school on the occasion of the Foundation day of the school. The school administration has bought three types of chocolates: Caramel, Dark Chocolate and Crunchy Bar. The prices of these three types of chocolates are Rs. 5, Rs. 10 and Rs. 20 respectively. Each class has at least 10 students and each student gets exactly one chocolate. The distribution of chocolates is to be done in such a way that each class must get chocolates worth Rs. 200.

Your Attempt: Skipped

% Students got it correct: 64 %

4) Suppose the school has ten classes. The school authorities bought total 50 chocolates of the type ‘Crunchy Bar’ and a sufficient number of chocolates of all other types. What is the maximum number of classes that can get more Crunchy Bars chocolates than any other type of chocolates?

Enter your response (as an integer) using the virtual keyboard in the box provided below.

Video Explanation: 

Explanation: 

To get the maximum number of classes which could have got more Crunchy Bars than any other chocolates type; the maximum number of classes must get 7 Crunchy Bars and 6 Dark Chocolates or the number of Dark Chocolates and Caramel chocolates can vary as per given in the solution of the first question of the set. Since total number of Crunchy Bars is 50, the maximum number of classes which can get more Crunchy Bars than any other chocolates type = $50/7 = 7.17$; thus 7 classes. Therefore, the required answer is 7.

Correct Answer: 

Time taken by you: 0 secs

Avg Time taken by all students: 39 secs

Your Attempt: Skipped

% Students got it correct: 27 %

Refer to the data below and answer the questions that follow.

Smartkids playschool is planning to distribute chocolates among the children of the school on the occasion of the Foundation day of the school. The school administration has bought three types of chocolates: Caramel, Dark Chocolate and Crunchy Bar. The prices of these three types of chocolates are Rs. 5, Rs. 10 and Rs. 20 respectively. Each class has at least 10 students and each student gets exactly one chocolate. The distribution of chocolates is to be done in such a way that each class must get chocolates worth Rs. 200.

Refer to the data below and answer the questions that follow.

Mr. and Mrs. Mirza and four other couples participated in a Dance Competition ‘Nach Baliye’. Each of the couple earned distinct points in the competition and earned money 1000 times of the points earned. For example, if a couple got 10 points, they earned Rs. 10,000.

1. The couple receiving the largest amount, got twice as much as the couple receiving the second largest amount.
2. Brad and his wife got second highest points and received 5 points more than Maya and her husband, while Maya and her husband received 10 points more than Mr. and Mrs. Nadal.
3. Micheal and his wife, who is not Serena, did not get the highest points among the five couples.
4. Mr. and Mrs. Heda did not get the highest points.
5. Nasir and his wife received an amount of Rs. 5,000 more than the Williams' and Rs. 10,000 more than Serena and her husband.
6. Mr. and Mrs. Jollie received Rs. 10,000 more than the amount received by Rachel and her husband.
7. Roger and his wife got 15 points in the dance competition.
8. Ned and his wife Catlyene got more points than Jennifer and her husband.
9. Serena’s last name is Nadal.

1) What was the amount earned by Ned and his wife in the dance competition? _

- ☐ Rs. 20,000
- ☐ Rs. 35,000
- ☐ Rs. 40,000
- ☒ Rs. 60,000 ✓

Video Explanation: ▼

Explanation: ▼

Using point 2 and 10:

			Points earned	Amount earned
Brad			$a + 15$	$1000a + 15000$
	Maya		$a + 10$	$1000a + 10000$
	Serena	Nadal	a	$1000a$

Using point 5 and 10:

			Points earned	Amount earned
Nasir			$a + 10$	$1000a + 10000$
		Williams	$a + 5$	$1000a + 5000$
	Serena	Nadal	a	$1000a$

Nasir must be Maya’s husband. Using point 2, Brad got the second highest points, thus, Nasir and Maya got the 3rd highest points. Williams got the 4th highest points and Serena and her husband got the least points. The table can be filled as follows:

			$2000a + 30000$
Brad			$1000a + 15000$
Nasir	Maya		$1000a + 10000$
		Williams	$1000a + 5000$
	Serena	Nadal	$1000a$

Using point 6, the last name of Brad is Mr. Jollie and Williams is the last name of Rachel. Using point 3, Micheal is Rachel’s husband. So, Ned must have earned the largest amount in the tournament. Also, Jennifer must be Brad’s wife. Using remaining points, the table can be completed as follows:

Husband	Wife	Last name	Points	Amount(in Rs.)
Ned	Catlyene	Mirza	60	60,000
Brad	Jennifer	Jollie	30	30,000
Nasir	Maya	Heda	25	25,000
Micheal	Rachel	Williams	20	20,000
Roger	Serena	Nadal	15	15,000

Ned and his wife earned Rs. 60,000. Hence, [4].

Correct Answer: ▼

Time taken by you: **645 secs**

Avg Time taken by all students: **651 secs**

Your Attempt: **Correct**

% Students got it correct: **86 %**

Refer to the data below and answer the questions that follow.

Mr. and Mrs. Mirza and four other couples participated in a Dance Competition ‘Nach Baliye’. Each of the couple earned distinct points in the competition and earned money 1000 times of the points earned. For example, if a couple got 10 points, they earned Rs. 10,000.

- The couple receiving the largest amount, got twice as much as the couple receiving the second largest amount.
- Brad and his wife got second highest points and received 5 points more than Maya and her husband, while Maya and her husband received 10 points more than Mr. and Mrs. Nadal.
- Micheal and his wife, who is not Serena, did not get the highest points among the five couples.
- Mr. and Mrs. Heda did not get the highest points.
- Nasir and his wife received an amount of Rs. 5,000 more than the Williams' and Rs. 10,000 more than Serena and her husband.
- Mr. and Mrs. Jollie received Rs. 10,000 more than the amount received by Rachel and her husband.
- Roger and his wife got 15 points in the dance competition.
- Ned and his wife Catlyene got more points than Jennifer and her husband.
- Serena’s last name is Nadal.

2) What is the average of the points earned by the Mirzas and Jollies?

- ☐ 25
- ☐ 35
- ☒ 45
- ☐ 55

Video Explanation: ▼

Explanation: ▼

Using point 2 and 10:

			Points earned	Amount earned
Brad			a + 15	1000a + 15000
	Maya		a + 10	1000a + 10000
	Serena	Nadal	a	1000a

Using point 5 and 10:

			Points earned	Amount earned
Nasir			a + 10	1000a + 10000
		Williams	a + 5	1000a + 5000
	Serena	Nadal	a	1000a

Nasir must be Maya’s husband. Using point 2, Brad got the second highest points, thus, Nasir and Maya got the 3rd highest points. Williams got the 4th highest points and Serena and her husband got the least points. The table can be filled as follows:

			2000a + 30000
Brad			1000a + 15000
Nasir	Maya		1000a + 10000
		Williams	1000a + 5000
	Serena	Nadal	1000a

Using point 6, the last name of Brad is Mr. Jollie and Williams is the last name of Rachel. Using point 3, Micheal is Rachel’s husband. So, Ned must have earned the largest amount in the tournament. Also, Jennifer must be Brad’s wife. Using remaining points, the table can be completed as follows:

Husband	Wife	Last name	Points	Amount(in Rs.)
Ned	Catlyene	Mirza	60	60,000
Brad	Jennifer	Jollie	30	30,000
Nasir	Maya	Heda	25	25,000
Micheal	Rachel	Williams	20	20,000
Roger	Serena	Nadal	15	15,000

$$\frac{60 + 30}{2} = 45.$$

Hence, [3].

Correct Answer: ▼

Time taken by you: **20 secs**

Avg Time taken by all students: **65 secs**

Your Attempt: **Correct**

Refer to the data below and answer the questions that follow.

Mr. and Mrs. Mirza and four other couples participated in a Dance Competition ‘Nach Baliye’. Each of the couple earned distinct points in the competition and earned money 1000 times of the points earned. For example, if a couple got 10 points, they earned Rs. 10,000.

1. The couple receiving the largest amount, got twice as much as the couple receiving the second largest amount.
2. Brad and his wife got second highest points and received 5 points more than Maya and her husband, while Maya and her husband received 10 points more than Mr. and Mrs. Nadal.
3. Micheal and his wife, who is not Serena, did not get the highest points among the five couples.
4. Mr. and Mrs. Heda did not get the highest points.
5. Nasir and his wife received an amount of Rs. 5,000 more than the Williams' and Rs. 10,000 more than Serena and her husband.
6. Mr. and Mrs. Jollie received Rs. 10,000 more than the amount received by Rachel and her husband.
7. Roger and his wife got 15 points in the dance competition.
8. Ned and his wife Catlyene got more points than Jennifer and her husband.
9. Serena’s last name is Nadal.

3) Who among the following is definitely a couple?

- ☐ Ned - Serena
- ☐ Micheal - Maya
- ☐ Roger - Jennifer
- ☒ Nasir - Maya

Video Explanation:

Explanation:

Using point 2 and 10:

			Points earned	Amount earned
Brad			a + 15	1000a + 15000
	Maya		a + 10	1000a + 10000
	Serena	Nadal	a	1000a

Using point 5 and 10:

			Points earned	Amount earned
Nasir			a + 10	1000a + 10000
		Williams	a + 5	1000a + 5000
	Serena	Nadal	a	1000a

Nasir must be Maya’s husband. Using point 2, Brad got the second highest points, thus, Nasir and Maya got the 3rd highest points. Williams got the 4th highest points and Serena and her husband got the least points. The table can be filled as follows:

			2000a + 30000
Brad			1000a + 15000
Nasir	Maya		1000a + 10000
		Williams	1000a + 5000
	Serena	Nadal	1000a

Using point 6, the last name of Brad is Mr. Jollie and Williams is the last name of Rachel. Using point 3, Micheal is Rachel’s husband. So, Ned must have earned the largest amount in the tournament. Also, Jennifer must be Brad’s wife. Using remaining points, the table can be completed as follows:

Husband	Wife	Last name	Points	Amount(in Rs.)
Ned	Catlyene	Mirza	60	60,000
Brad	Jennifer	Jollie	30	30,000
Nasir	Maya	Heda	25	25,000
Micheal	Rachel	Williams	20	20,000
Roger	Serena	Nadal	15	15,000

Nasir - Maya is a couple.
Hence, [4].

Correct Answer:

Time taken by you: 8 secs

Avg Time taken by all students: 133 secs

Your Attempt: Correct

Refer to the data below and answer the questions that follow.

Mr. and Mrs. Mirza and four other couples participated in a Dance Competition ‘Nach Baliye’. Each of the couple earned distinct points in the competition and earned money 1000 times of the points earned. For example, if a couple got 10 points, they earned Rs. 10,000.

1. The couple receiving the largest amount, got twice as much as the couple receiving the second largest amount.
2. Brad and his wife got second highest points and received 5 points more than Maya and her husband, while Maya and her husband received 10 points more than Mr. and Mrs. Nadal.
3. Micheal and his wife, who is not Serena, did not get the highest points among the five couples.
4. Mr. and Mrs. Heda did not get the highest points.
5. Nasir and his wife received an amount of Rs. 5,000 more than the Williams' and Rs. 10,000 more than Serena and her husband.
6. Mr. and Mrs. Jollie received Rs. 10,000 more than the amount received by Rachel and her husband.
7. Roger and his wife got 15 points in the dance competition.
8. Ned and his wife Catlyene got more points than Jennifer and her husband.
9. Serena’s last name is Nadal.

4) Who is Brad’s wife?

- ☐ Catlyene
- ☐ Serena
- ☒ Jennifer
- ☐ Rachel

Video Explanation:

Explanation:

Using point 2 and 10:

			Points earned	Amount earned
Brad			a + 15	1000a + 15000
	Maya		a + 10	1000a + 10000
	Serena	Nadal	a	1000a

Using point 5 and 10:

			Points earned	Amount earned
Nasir			a + 10	1000a + 10000
		Williams	a + 5	1000a + 5000
	Serena	Nadal	a	1000a

Nasir must be Maya’s husband. Using point 2, Brad got the second highest points, thus, Nasir and Maya got the 3rd highest

oints. Williams got the 4th highest points and Serena and her husband got the least points. The table can be filled as follows:

			2000a + 30000
Brad			1000a + 15000
Nasir	Maya		1000a + 10000
		Williams	1000a + 5000
	Serena	Nadal	1000a

Using point 6, the last name of Brad is Mr. Jollie and Williams is the last name of Rachel. Using point 3, Micheal is Rachel’s husband. So, Ned must have earned the largest amount in the tournament. Also, Jennifer must be Brad’s wife. Using remaining points, the table can be completed as follows:

Husband	Wife	Last name	Points	Amount(in Rs.)
Ned	Catlyene	Mirza	60	60,000
Brad	Jennifer	Jollie	30	30,000
Nasir	Maya	Heda	25	25,000
Micheal	Rachel	Williams	20	20,000
Roger	Serena	Nadal	15	15,000

Jennifer is Brad’s wife. Hence, [3].

Correct Answer:

Time taken by you: 4 secs

Avg Time taken by all students: 69 secs

Your Attempt: Correct

Refer to the data below and answer the questions that follow.

Mr. and Mrs. Mirza and four other couples participated in a Dance Competition ‘Nach Baliye’. Each of the couple earned distinct points in the competition and earned money 1000 times of the points earned. For example, if a couple got 10 points, they earned Rs. 10,000.

1. The couple receiving the largest amount, got twice as much as the couple receiving the second largest amount.
2. Brad and his wife got second highest points and received 5 points more than Maya and her husband, while Maya and her husband received 10 points more than Mr. and Mrs. Nadal.
3. Micheal and his wife, who is not Serena, did not get the highest points among the five couples.
4. Mr. and Mrs. Heda did not get the highest points.
5. Nasir and his wife received an amount of Rs. 5,000 more than the Williams' and Rs. 10,000 more than Serena and her husband.
6. Mr. and Mrs. Jollie received Rs. 10,000 more than the amount received by Rachel and her husband.
7. Roger and his wife got 15 points in the dance competition.
8. Ned and his wife Catlyene got more points than Jennifer and her husband.
9. Serena’s last name is Nadal.

Loading...

Refer to the data below and answer the questions that follow.

Five employees, E1, E2, E3, E4 and E5 were given assignments under three projects P1, P2 and P3. The number of assignments assigned to five employees in P1 were 2, 4, 5, 8 and 12. The number of assignments assigned to five employees in P2 were 0, 2, 4, 6 and 12.

Further following information is known about the assignments assigned to the five employees.

1. The number of assignments assigned to E1 in P2 was three times of that assigned to E4 in P2. E4 was assigned 5 assignments in P1.
2. The number of assignment assigned to E2 in P1 was twice of the number of assignments assigned to E2 in P2.
3. E3 was the only employee who did not get any assignments in P3.
4. E4 was assigned total 20 assignments in all the three projects together. No other employee was assigned assignments more than 20 in all the three projects together.
5. Number of assignments assigned to E5 in P1 was twice of the number of assignments assigned to E5 in P2, which in turn was double than the number of assignments assigned to E5 in P3.
6. Total number of assignments in P3 was 14.

1) How many assignments were assigned to E2 in P3?

—

- ☒ 1 ✓
- ☐ 2
- ☐ 3
- ☐ Cannot be determined

Video Explanation:

▼

Explanation:

▼

Using point 1: E1 was assigned either 12 or 6 assignments in P2. These two cases can be presented as follows:

	Case 1		Case 2	
	P1	P2	P1	P2
E1		6		12
E4	5	2	5	4

Using point 4, E4 was assigned total 20 assignments. In case 1, E4 must have assigned 13 assignments in P3. Using point 6, exactly one more assignment was given to one of the remaining employees, a contradiction to point 3. So case I is invalid.

Case 2: Using point 4, E4 was assigned total 20 assignments, thus E4 was assigned 11 assignments in P3. Since only E3 did not get any assignments in P3, therefore E1, E2 and E5 were assigned 1 assignment each in P3. Now using point 5: E5 was assigned 4, 2 and 1 assignments in P1, P2 and P3 respectively.

Using point 2, E2 was assigned 12 and 6 assignments in P1 and P2 respectively. Now E1 and E3 were assigned 2 or 8 assignments in P1 in any order. If E1 was assigned 8 assignments, it violates condition 4. Thus, E1 was assigned 2 assignments and E3 was assigned 8 assignments in P1.

The final table can be made as follows:

	P1	P2	P3	Total
E1	2	12	1	15
E2	12	6	1	19
E3	8	0	0	8
E4	5	4	11	20
E5	4	2	1	7
Total	31	24	14	69

E2 was assigned 1 assignment in P3. Hence, [1].

Correct Answer:

▼

Time taken by you: **592 secs**

Avg Time taken by all students: **536 secs**

Your Attempt: **Correct**

Refer to the data below and answer the questions that follow.

Five employees, E1, E2, E3, E4 and E5 were given assignments under three projects P1, P2 and P3. The number of assignments assigned to five employees in P1 were 2, 4, 5, 8 and 12. The number of assignments assigned to five employees in P2 were 0, 2, 4, 6 and 12.

Further following information is known about the assignments assigned to the five employees.

- The number of assignments assigned to E1 in P2 was three times of that assigned to E4 in P2. E4 was assigned 5 assignments in P1.
- The number of assignment assigned to E2 in P1 was twice of the number of assignments assigned to E2 in P2.
- E3 was the only employee who did not get any assignments in P3.
- E4 was assigned total 20 assignments in all the three projects together. No other employee was assigned assignments more than 20 in all the three projects together.
- Number of assignments assigned to E5 in P1 was twice of the number of assignments assigned to E5 in P2, which in turn was double than the number of assignments assigned to E5 in P3.
- Total number of assignments in P3 was 14.

2) How many assignments were assigned to E1 in P1?

1

2✔

3

Cannot be determined

Video Explanation:

▼

Explanation:

▼

Using point 1: E1 was assigned either 12 or 6 assignments in P2. These two cases can be presented as follows:

	Case 1		Case 2	
	P1	P2	P1	P2
E1		6		12
E4	5	2	5	4

Using point 4, E4 was assigned total 20 assignments. In case 1, E4 must have assigned 13 assignments in P3. Using point 6, exactly one more assignment was given to one of the remaining employees, a contradiction to point 3. So case I is invalid.

Case 2: Using point 4, E4 was assigned total 20 assignments, thus E4 was assigned 11 assignments in P3. Since only E3 did not get any assignments in P3, therefore E1, E2 and E5 were assigned 1 assignment each in P3. Now using point 5: E5 was assigned 4, 2 and 1 assignments in P1, P2 and P3 respectively.

Using point 2, E2 was assigned 12 and 6 assignments in P1 and P2 respectively. Now E1 and E3 were assigned 2 or 8 assignments in P1 in any order. If E1 was assigned 8 assignments, it violates condition 4. Thus, E1 was assigned 2 assignments and E3 was assigned 8 assignments in P1.

The final table can be made as follows:

	P1	P2	P3	Total
E1	2	12	1	15
E2	12	6	1	19
E3	8	0	0	8
E4	5	4	11	20
E5	4	2	1	7
Total	31	24	14	69

E1 was assigned 2 assignments in P1. Hence, [2].

Correct Answer:

▼

Time taken by you: 121 secs

Avg Time taken by all students: 82 secs

Your Attempt: Correct


Refer to the data below and answer the questions that follow.

Five employees, E1, E2, E3, E4 and E5 were given assignments under three projects P1, P2 and P3. The number of assignments assigned to five employees in P1 were 2, 4, 5, 8 and 12. The number of assignments assigned to five employees in P2 were 0, 2, 4, 6 and 12.

Further following information is known about the assignments assigned to the five employees.

- The number of assignments assigned to E1 in P2 was three times of that assigned to E4 in P2. E4 was assigned 5 assignments in P1.
- The number of assignment assigned to E2 in P1 was twice of the number of assignments assigned to E2 in P2.
- E3 was the only employee who did not get any assignments in P3.
- E4 was assigned total 20 assignments in all the three projects together. No other employee was assigned assignments more than 20 in all the three projects together.
- Number of assignments assigned to E5 in P1 was twice of the number of assignments assigned to E5 in P2, which in turn was double than the number of assignments assigned to E5 in P3.
- Total number of assignments in P3 was 14.

3) How many assignments were assigned to E3 in P1? —

- ☐ 2
- ☐ 12
- ☒ 8 
- ☐ 4

Video Explanation: ▼

Explanation: ▼

Using point 1: E1 was assigned either 12 or 6 assignments in P2. These two cases can be presented as follows:

	Case 1		Case 2	
	P1	P2	P1	P2
E1		6		12
E4	5	2	5	4

Using point 4, E4 was assigned total 20 assignments. In case 1, E4 must have assigned 13 assignments in P3. Using point 6, exactly one more assignment was given to one of the remaining employees, a contradiction to point 3. So case I is invalid.

Case 2: Using point 4, E4 was assigned total 20 assignments, thus E4 was assigned 11 assignments in P3. Since only E3 did not get any assignments in P3, therefore E1, E2 and E5 were assigned 1 assignment each in P3. Now using point 5: E5 was assigned 4, 2 and 1 assignments in P1, P2 and P3 respectively.

Using point 2, E2 was assigned 12 and 6 assignments in P1 and P2 respectively. Now E1 and E3 were assigned 2 or 8 assignments in P1 in any order. If E1 was assigned 8 assignments, it violates condition 4. Thus, E1 was assigned 2 assignments and E3 was assigned 8 assignments in P1.

The final table can be made as follows:

	P1	P2	P3	Total
E1	2	12	1	15
E2	12	6	1	19
E3	8	0	0	8
E4	5	4	11	20
E5	4	2	1	7
Total	31	24	14	69

E3 was assigned 8 assignments in P1. Hence, [3].

Correct Answer: ▼

Time taken by you: 10 secs

Avg Time taken by all students: 40 secs

Your Attempt: Correct

Refer to the data below and answer the questions that follow.

Five employees, E1, E2, E3, E4 and E5 were given assignments under three projects P1, P2 and P3. The number of assignments assigned to five employees in P1 were 2, 4, 5, 8 and 12. The number of assignments assigned to five employees in P2 were 0, 2, 4, 6 and 12.

Further following information is known about the assignments assigned to the five employees.

1. The number of assignments assigned to E1 in P2 was three times of that assigned to E4 in P2. E4 was assigned 5 assignments in P1.
2. The number of assignment assigned to E2 in P1 was twice of the number of assignments assigned to E2 in P2.
3. E3 was the only employee who did not get any assignments in P3.
4. E4 was assigned total 20 assignments in all the three projects together. No other employee was assigned assignments more than 20 in all the three projects together.
5. Number of assignments assigned to E5 in P1 was twice of the number of assignments assigned to E5 in P2, which in turn was double than the number of assignments assigned to E5 in P3.
6. Total number of assignments in P3 was 14.

4) How many total assignments were assigned to E5 in all the three projects together?

- ☐ 5
- ☐ 6
- ☒ 7
- ☐ 8

Video Explanation:

Explanation:

Using point 1: E1 was assigned either 12 or 6 assignments in P2. These two cases can be presented as follows:

	Case 1		Case 2	
	P1	P2	P1	P2
E1		6		12
E4	5	2	5	4

Using point 4, E4 was assigned total 20 assignments. In case 1, E4 must have assigned 13 assignments in P3. Using point 6, exactly one more assignment was given to one of the remaining employees, a contradiction to point 3. So case I is invalid.

Case 2: Using point 4, E4 was assigned total 20 assignments, thus E4 was assigned 11 assignments in P3. Since only E3 did not get any assignments in P3, therefore E1, E2 and E5 were assigned 1 assignment each in P3. Now using point 5: E5 was assigned 4, 2 and 1 assignments in P1, P2 and P3 respectively.

Using point 2, E2 was assigned 12 and 6 assignments in P1 and P2 respectively. Now E1 and E3 were assigned 2 or 8 assignments in P1 in any order. If E1 was assigned 8 assignments, it violates condition 4. Thus, E1 was assigned 2 assignments and E3 was assigned 8 assignments in P1.

The final table can be made as follows:

	P1	P2	P3	Total
E1	2	12	1	15
E2	12	6	1	19
E3	8	0	0	8
E4	5	4	11	20
E5	4	2	1	7
Total	31	24	14	69

Total 7 assignments were assigned to E5 in all the three projects together.
Hence, [3].

Correct Answer:

Time taken by you: 39 secs

Refer to the data below and answer the questions that follow.

Five employees, E1, E2, E3, E4 and E5 were given assignments under three projects P1, P2 and P3. The number of assignments assigned to five employees in P1 were 2, 4, 5, 8 and 12. The number of assignments assigned to five employees in P2 were 0, 2, 4, 6 and 12.

Further following information is known about the assignments assigned to the five employees.

1. The number of assignments assigned to E1 in P2 was three times of that assigned to E4 in P2. E4 was assigned 5 assignments in P1.
2. The number of assignment assigned to E2 in P1 was twice of the number of assignments assigned to E2 in P2.
3. E3 was the only employee who did not get any assignments in P3.
4. E4 was assigned total 20 assignments in all the three projects together. No other employee was assigned assignments more than 20 in all the three projects together.
5. Number of assignments assigned to E5 in P1 was twice of the number of assignments assigned to E5 in P2, which in turn was double than the number of assignments assigned to E5 in P3.
6. Total number of assignments in P3 was 14.

Your Attempt: **Correct**

% Students got it correct: **93 %**

Loading...

Refer to the data below and answer the questions that follow.

In a coding system each letter of English Alphabet is coded as a number which is either sum of the digits of its position in the English Alphabet or the square of the sum of the digits of its position in the English Alphabet. For example letter 'V' is 22nd letter in the English Alphabet. The code for 'V' is either sum of the digits of its position ($2 + 2 = 4$) or the square of the sum of the digits of its position ($\{2 + 2\}^2 = 16$). The code for two or more letters can be same. The coding follows a particular pattern.

It is known that, 'Jammu & Kashmir and Ladakh are two new Union Territories in India' is coded as 11443 & 2110644981 12516 91161264 1815 456 2555 3259625 458181946819510 925 9251691.

1) What is the code for the letter 'K'? (Write 0 if answer cannot be determined.)

Enter your response (as an integer) using the virtual keyboard in the box provided below.

2

Video Explanation: ▼

Explanation: ▼

The code for 'two': 456, thus each letter is coded as single digit number. The position of t, w and o in EnglishAlphabet : t – 20, w – 23, o – 15. It can be concluded that code for t = $4 = (2 + 0)^2$; code for w = $2 + 3 = 5$ and code for o = $1 + 5 = 6$. The code for 'in': 925. The position of i and n in the English Alphabet: i – 9 and n – 14; thus code for i = 9 and code for n = $25 = (1 + 4)^2$. The code for word 'new': 2555, thus the code for e = 5. Now in the word 'India': i = 9, n = 25. The position of d and a in the English Alphabet : d – 4 and a – 1; thus code for d = 16 and code for a = 1. The code for 'are': 1815, here a = 1 and e = 5 thus, r = 81. In the word 'territories' the code for o and s: The position of o and s in the English Alphabet is 15 and 19, thus the code for o = 6 and the code for s = 10 In the word 'Kashmir', the code for k, h and m : 2644 and in the work 'Ladakh' the code for l, k and h : 9264 Thus, the code for l = 9, code for m = 4. The position of k and h in English Alphabet is 11 and 8 respectively, thus code for k = 2 and code for h = 64. In the word 'union' the code for u must be 3.

The following table can be made:

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
Position in English Alphabet	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Code	1			16	5		64	9			2	9	4	25	6			81	10	4	3

	V	W	X	Y	Z
Position in English Alphabet	22	23	24	25	26
Code		5			

Since, the coding follows a particular pattern, here, we can see that all the letters positioned at odd places are coded as sum of the digits of their positions in English Alphabet while all the letters positioned at even places are coded as the square of the sum of the digits of their positions in the English Alphabet. Now the codes for each letter can be generated.

The following table can be made:

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
Position in English Alphabet	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Code	1	4	3	16	5	36	7	64	9	1	2	9	4	25	6	49	8	81	10	4	3

	V	W	X	Y	Z
Position in English Alphabet	22	23	24	25	26
Code	16	5	36	7	64

Therefore, the required answer is 2.

Refer to the data below and answer the questions that follow.

In a coding system each letter of English Alphabet is coded as a number which is either sum of the digits of its position in the English Alphabet or the square of the sum of the digits of its position in the English Alphabet. For example letter ‘V’ is 22nd letter in the English Alphabet. The code for ‘V’ is either sum of the digits of its position (2 + 2 = 4) or the square of the sum of the digits of its position {(2 + 2)² = 16}. The code for two or more letters can be same. The coding follows a particular pattern.

It is known that, '*Jammu & Kashmir* and *Ladakh* are two new Union Territories in India' is coded as 11443 & 2110644981 12516 91161264 1815 456 2555 3259625 458181946819510 925 9251691.

Time taken by you: **514 secs**

Avg Time taken by all students: **370 secs**

Your Attempt: **Correct**

% Students got it correct: **92 %**

2) What is the code for letter ‘P’? (Write 0 if answer cannot be determined.)

Enter your response (as an integer) using the virtual keyboard in the box provided below.

0

Video Explanation: ▼

Refer to the data below and answer the questions that follow.

In a coding system each letter of English Alphabet is coded as a number which is either sum of the digits of its position in the English Alphabet or the square of the sum of the digits of its position in the English Alphabet. For example letter 'V' is 22nd letter in the English Alphabet. The code for 'V' is either sum of the digits of its position (2 + 2 = 4) or the square of the sum of the digits of its position $\{(2 + 2)^2 = 16\}$. The code for two or more letters can be same. The coding follows a particular pattern.

It is known that, 'Jammu & Kashmir and Ladakh are two new Union Territories in India' is coded as 11443 & 2110644981 12516 91161264 1815 456 2555 3259625 458181946819510 925 9251691.

Explanation:

The code for 'two': 456, thus each letter is coded as single digit number. The position of t, w and o in English Alphabet : t – 20, w – 23, o – 15. It can be concluded that code for t = $4 = (2 + 0)^2$; code for w = $2 + 3 = 5$ and code for o = $1 + 5 = 6$.

The code for 'in': 925. The position of i and n in the English Alphabet: i – 9 and n – 14; thus code for i = 9 and code for n = $25 = (1 + 4)^2$.

The code for word 'new': 2555, thus the code for e = 5.

Now in the word 'India': i = 9, n = 25. The position of d and a in the English Alphabet : d – 4 and a – 1; thus code for d = 16 and code for a = 1.

The code for 'are': 1815, here a = 1 and e = 5 thus, r = 81.

In the word 'territories' the code for o and s: The position of o and s in the English Alphabet is 15 and 19, thus the code for o = 6 and the code for s = 10

In the word 'Kashmir', the code for k, h and m : 2644 and in the work 'Ladakh' the code for l, k and h : 9264 Thus, the code for l = 9, code for m = 4. The position of k and h in English Alphabet is 11 and 8 respectively, thus code for k = 2 and code for h = 64.

In the word 'union' the code for u must be 3.

The following table can be made:

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
Position in English Alphabet	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Code	1			16	5			64	9		2	9	4	25	6			81	10	4	3

	V	W	X	Y	Z
Position in English Alphabet	22	23	24	25	26
Code			5		

Since, the coding follows a particular pattern, here, we can see that all the letters positioned at odd places are coded as sum of the digits of their positions in English Alphabet while all the letters positioned at even places are coded as the square of the sum of the digits of their positions in the English Alphabet. Now the codes for each letter can be generated.

The following table can be made:

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
Position in English Alphabet	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Code	1	4	3	16	5	36	7	64	9	1	2	9	4	25	6	49	8	81	10	4	3

	V	W	X	Y	Z
Position in English Alphabet	22	23	24	25	26
Code	16	5	36	7	64

Therefore, the required answer is 49.

Correct Answer:

Time taken by you: 115 secs

Avg Time taken by all students: 41 secs

Your Attempt: Wrong

Refer to the data below and answer the questions that follow.

In a coding system each letter of English Alphabet is coded as a number which is either sum of the digits of its position in the English Alphabet or the square of the sum of the digits of its position in the English Alphabet. For example letter 'V' is 22nd letter in the English Alphabet. The code for 'V' is either sum of the digits of its position ($2 + 2 = 4$) or the square of the sum of the digits of its position ($\{2 + 2\}^2 = 16$). The code for two or more letters can be same. The coding follows a particular pattern.

It is known that, 'Jammu & Kashmir and Ladakh are two new Union Territories in India' is coded as 11443 & 2110644981 12516 91161264 1815 456 2555 3259625 458181946819510 925 9251691.

3) How many numbers are required to code all the letters in the English Alphabet?

- 14
- 16 ✓
- 18
- 20

Video Explanation:

Explanation:

The code for 'two': 456, thus each letter is coded as single digit number. The position of t, w and o in English Alphabet : t – 20, w – 23, o – 15. It can be concluded that code for t = $4 = (2 + 0)^2$; code for w = $2 + 3 = 5$ and code for o = $1 + 5 = 6$. The code for 'in': 925. The position of i and n in the English Alphabet: i – 9 and n – 14; thus code for i = 9 and code for n = $25 = (1 + 4)^2$.

The code for word 'new': 2555, thus the code for e = 5. Now in the word 'India': i = 9, n = 25. The position of d and a in the English Alphabet : d – 4 and a – 1; thus code for d = 16 and code for a = 1.

The code for 'are': 1815, here a = 1 and e = 5 thus, r = 81. In the word 'territories' the code for o and s: The position of o and s in the English Alphabet is 15 and 19, thus the code for o = 6 and the code for s = 10

In the word 'Kashmir', the code for k, h and m : 2644 and in the work 'Ladakh' the code for l, k and h : 9264 Thus, the code for l = 9, code for m = 4. The position of k and h in English Alphabet is 11 and 8 respectively, thus code for k = 2 and code for h = 64.

In the word 'union' the code for u must be 3.

The following table can be made:

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
Position in English Alphabet	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Code	1			16	5			64	9		2	9	4	25	6			81	10	4	3

	V	W	X	Y	Z
Position in English Alphabet	22	23	24	25	26
Code		5			

Since, the coding follows a particular pattern, here, we can see that all the letters positioned at odd places are coded as sum of the digits of their positions in English Alphabet while all the letters positioned at even places are coded as the square of the sum of the digits of their positions in the English Alphabet. Now the codes for each letter can be generated.

The following table can be made:

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
Position in English Alphabet	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Code	1	4	3	16	5	36	7	64	9	1	2	9	4	25	6	49	8	81	10	4	3

	V	W	X	Y	Z
Position in English Alphabet	22	23	24	25	26
Code	16	5	36	7	64

In all 16 numbers are required to code all the letters in the English Alphabet.
Hence, [2].

Refer to the data below and answer the questions that follow.

In a coding system each letter of English Alphabet is coded as a number which is either sum of the digits of its position in the English Alphabet or the square of the sum of the digits of its position in the English Alphabet. For example letter ‘V’ is 22nd letter in the English Alphabet. The code for ‘V’ is either sum of the digits of its position (2 + 2 = 4) or the square of the sum of the digits of its position {(2 + 2)² = 16}. The code for two or more letters can be same. The coding follows a particular pattern.

It is known that, '*Jammu & Kashmir* and *Ladakh* are two new Union Territories in India' is coded as 11443 & 2110644981 12516 91161264 1815 456 2555 3259625 458181946819510 925 9251691.

Time taken by you: **213 secs**

Avg Time taken by all students: **121 secs**

Your Attempt: **Correct**

% Students got it correct: **57 %**

4) Which of the following is the code for ‘CAT is a difficult exam’? —

- ☐ 314 919 1 169363693394 53614
- ☐ 314 910 1 169363693394 52614
- ☐ 314 910 1 169363693394 53614
- ☒ 314 910 1 169663683394 53614 ✖

Video Explanation: ▼

Refer to the data below and answer the questions that follow.

In a coding system each letter of English Alphabet is coded as a number which is either sum of the digits of its position in the English Alphabet or the square of the sum of the digits of its position in the English Alphabet. For example letter ‘V’ is 22nd letter in the English Alphabet. The code for ‘V’ is either sum of the digits of its position (2 + 2 = 4) or the square of the sum of the digits of its position {(2 + 2)² = 16}. The code for two or more letters can be same. The coding follows a particular pattern.

It is known that, 'Jammu & Kashmir and Ladakh are two new Union Territories in India' is coded as 11443 & 2110644981 12516 91161264 1815 456 2555 3259625 458181946819510 925 9251691.

The code for ‘two’: 456, thus each letter is coded as single digit number. The position of t, w and o in EnglishAlphabet : t – 20, w – 23, o – 15. It can be concluded that code for t = 4 = (2 + 0)²; code for w = 2 + 3 = 5 and code for o = 1 + 5 = 6.

The code for ‘in’: 925. The position of i and n in the English Alphabet: i – 9 and n – 14; thus code for i = 9 and code for n = 25 = (1 + 4)².

The code for word ‘new’: 2555, thus the code for e = 5.

Now in the word ‘India’: i = 9, n = 25. The position of d and a in the English Alphabet : d – 4 and a – 1 ; thus code for d = 16 and code for a = 1.

The code for ‘are’: 1815, here a = 1 and e = 5 thus, r = 81.

In the word ‘territories’ the code for o and s: The position of o and s in the English Alphabet is 15 and 19, thus the code for o = 6 and the code for s = 10

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In the word ‘union’ the code for u must be 3.

The following table can be made:

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
Position in English Alphabet	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Code	1			16	5		64	9		2	9	4	25	6			81	10	4	3	

	V	W	X	Y	Z
Position in English Alphabet	22	23	24	25	26
Code		5			

Since, the coding follows a particular pattern, here, we can see that all the letters positioned at odd places are coded as sum of the digits of their positions in English Alphabet while all the letters positioned at even places are coded as the square of the sum of the digits of their positions in the English Alphabet. Now the codes for each letter can be generated.

The following table can be made:

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
Position in English Alphabet	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Code	1	4	3	16	5	36	7	64	9	1	2	9	4	25	6	49	8	81	10	4	3

	V	W	X	Y	Z
Position in English Alphabet	22	23	24	25	26
Code	16	5	36	7	64

'CAT is a difficult exam' will be coded as ‘314 910 1 169363693394 53614’. Hence, [3].

Correct Answer:

Time taken by you: 72 secs

Avg Time taken by all students: 186 secs

Your Attempt: Wrong

% Students got it correct: 86 %

Refer to the data below and answer the questions that follow.

In a coding system each letter of English Alphabet is coded as a number which is either sum of the digits of its position in the English Alphabet or the square of the sum of the digits of its position in the English Alphabet. For example letter ‘V’ is 22nd letter in the English Alphabet. The code for ‘V’ is either sum of the digits of its position (2 + 2 = 4) or the square of the sum of the digits of its position {(2 + 2)² = 16}. The code for two or more letters can be same. The coding follows a particular pattern.

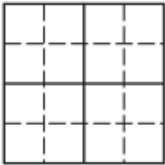
It is known that, '*Jammu & Kashmir* and *Ladakh* are two new Union Territories in India' is coded as 11443 & 2110644981 12516 91161264 1815 456 2555 3259625 458181946819510 925 9251691.

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Refer to the data below and answer the questions that follow.

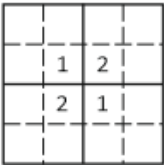
A 4×4 grid has 4 smaller grids of 2×2 like shown in the diagram in below in bold.

All the cells in the grid are distinct and are referred to by the number of the row and the column they belong to. For example, the top right cell is referred to as C_{14} because it is in the first row and the fourth column.



Numbers from 1 to 4 are to be filled in the grid, such that each row and each column has each number exactly once. Also, each small grid of 2×2 also has each number exactly once.

1) In how many ways, can this 4×4 grid be completely filled? —



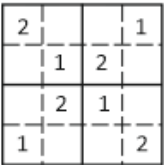
Enter your response (as an integer) using the virtual keyboard in the box provided.

64

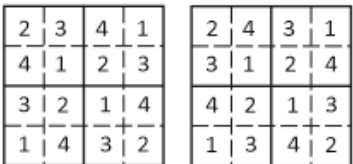
Video Explanation: ▼

Explanation: ▼

Here, remaining two 2s and two 1s can be fixed as follows:



Now the grid can be filled in the following 2 ways:



Therefore the required answer is 2.

Correct Answer: ▼

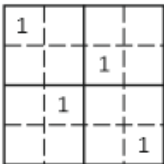
Time taken by you: 156 secs

Avg Time taken by all students: 155 secs

Your Attempt: Wrong

% Students got it correct: 47 %

2) In how many ways can the following grid be filled? —

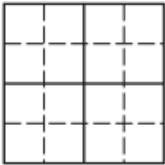


Enter your response (as an integer) using the virtual keyboard in the

Refer to the data below and answer the questions that follow.

A 4×4 grid has 4 smaller grids of 2×2 like shown in the diagram in below in bold.

All the cells in the grid are distinct and are referred to by the number of the row and the column they belong to. For example, the top right cell is referred to as C_{14} because it is in the first row and the fourth column.



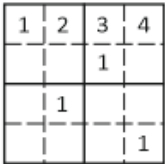
Numbers from 1 to 4 are to be filled in the grid, such that each row and each column has each number exactly once. Also, each small grid of 2×2 also has each number exactly once.

Video Explanation: ▼

Explanation: ▼

First row can be filled in $3 \times 2 = 6$ ways.

Let's take any one way to fill the first row.



Now we will have three cases:

Case 1 a: Case 1 b: Case 1 c:



So, the total number of ways = $6 \times 3 = 18$

Therefore, the required answer is 18.

Correct Answer: ▼

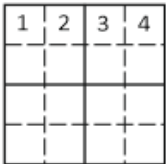
Time taken by you: 0 secs

Avg Time taken by all students: 10 secs

Your Attempt: Skipped

% Students got it correct: 4 %

3) In how many ways can the following grid be completely filled?



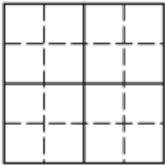
- ☐ 4
- ☐ 8
- ☐ 12
- ☐ 16

Video Explanation: ▼

Refer to the data below and answer the questions that follow.

A 4×4 grid has 4 smaller grids of 2×2 like shown in the diagram in below in bold.

All the cells in the grid are distinct and are referred to by the number of the row and the column they belong to. For example, the top right cell is referred to as C_{14} because it is in the first row and the fourth column.

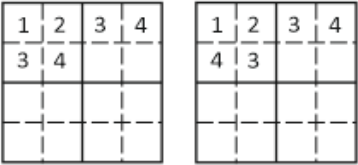


Numbers from 1 to 4 are to be filled in the grid, such that each row and each column has each number exactly once. Also, each small grid of 2×2 also has each number exactly once.

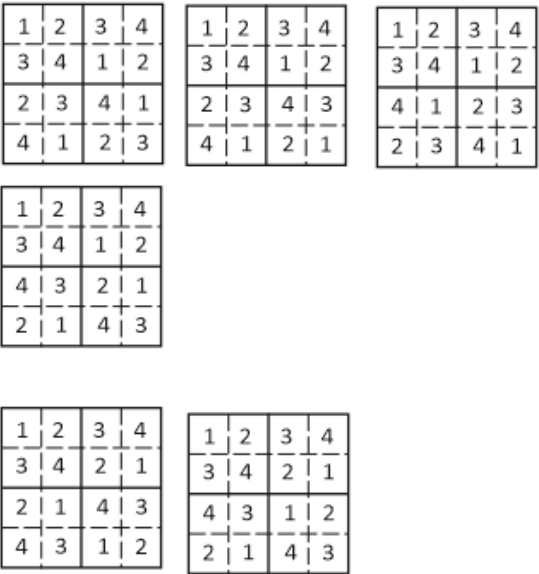
C_{21} can be filled in 2 ways, C_{22} in 1 way.
So the number of ways to fill the top left (2×2) smaller grid = $2 \times 1 = 2$

i.e.,

OR



Now this grid can be filled in the following 6 ways:



Total number of ways = $2 \times 6 = 12$

Hence, [3].

Correct Answer:

Time taken by you: 0 secs

Avg Time taken by all students: 49 secs

Your Attempt: Skipped

% Students got it correct: 31 %

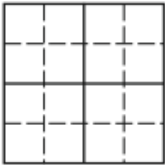
4) In how many ways can the 4×4 grid be completely filled? _

- 196
- 288
- 324
- 384

Refer to the data below and answer the questions that follow.

A 4×4 grid has 4 smaller grids of 2×2 like shown in the diagram in below in bold.

All the cells in the grid are distinct and are referred to by the number of the row and the column they belong to. For example, the top right cell is referred to as C_{14} because it is in the first row and the fourth column.



Numbers from 1 to 4 are to be filled in the grid, such that each row and each column has each number exactly once. Also, each small grid of 2×2 also has each number exactly once.

Explanation: ▼

Starting from C_{11} to C_{14} , number of ways of filling will be $4 \times 3 \times 2 \times 1 = 24$

C_{21} to C_{44} , taking the previous explanation in consideration, the total number of ways = 12

Total number of ways = $24 \times 12 = 288$

Hence, [2].

Correct Answer: ▼

Time taken by you: **12 secs**

Avg Time taken by all students: **68 secs**

Your Attempt: **Skipped**

% Students got it correct: **41 %**

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