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MTH1034 Quiz No. 2

MTH1034 Quiz No. 2

Question # 3 of 10 (Start time: 11:16:21 PM, 17 June 2022)

Let $a = 2^5 \cdot 5^2 \cdot 7^3$ and $b = 2^3 \cdot 3^4 \cdot 5^5 \cdot 11^2$. Find $\gcd(a, b)$.

Select the correct option



$$\gcd(a, b) = 2^5 \cdot 5^2$$



$$\gcd(a, b) = 2^5 \cdot 5^2 \cdot 7^3 \cdot 11^2$$



$$\gcd(a, b) = 2^5 \cdot 5^2$$



none

Let $A = \{1, 2, 3, 4, 5, 6\}$. Determine which of the following are partitions of A :

▶ Select the correct option

- | | |
|-----------------------|---|
| ☐ | $\{\{1, 2, 3\}, \{1, 4, 5, 6\}\}$ |
| ☐ | $\{\{1, 2\}, \{3, 5, 6\}\}$ |
| ☐ | both $\{\{1, 3, 5\}, \{2, 4, 6\}\}$ and $\{\{1, 2\}, \{3, 5, 6\}\}$ |
| ☐ | $\{\{1, 3, 5\}, \{2, 4, 6\}\}$ |

Q E U

Question # 3 of 10 (Start time: 05:50:06 PM, 17 June 2022)

Total

Consider a given set A . A relation R on a set A is reflexive if aRa for every $a \in A$, that is, $(a,a) \in R$ for every $a \in A$.

Select the correct option

Reload Math E

☐ Given statement is true.

AEO

☐ Given statement is false.

Click to Save Answer & Move to Next Question

Question # 5 of 10 (Start time: 05:05:40 PM, 17 June 2022)

Total Marks: 1

Let R be a relation on a set A. Then:

Select the correct option

 Reload Math Equations

- ☐ $R \cup R^{-1}$ is the reflexive closure of R.
- ☐ $R \cup R^{-1}$ is the symmetric closure of R.

2 E 0

Click to Save Answer & move to Next Question

Question # 7 of 10 (Start time: 05:55:34 PM, 17 June 2022)

Consider two relations R and S . Then for the composition of relation $R \circ S$, the following is true:

Select the correct option



$$R \circ S \neq S \circ R$$

$\theta \leq 0$



$$R \circ S = S \circ R$$

[Click to Save Answer](#)

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Question # 9 of 10 (Start time: 05:57:42 PM, 17 June 2022)

Given the set $A = \{0, 1, 2\}$ with the relations $R = \{(0, 1), (1, 0), (2, 2)\}$ and $S = \{(0, 0), (2, 1), (1, 0)\}$. Then $R \circ S =$ _____

Select the correct option

☐ $R \circ S = \{(0, 0), (0, 1), (1, 2)\}$

☒ $R \circ S = \{(0, 0), (1, 0), (2, 1)\}$

Click

QED

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Question # 2 of 10 (Start time: 06:18:05 PM, 17 June 2022)

Fundamental theorem of arithmetic is "Every integer $n > 1$ can be expressed uniquely _____

Select the correct option

- | | |
|-----------------------|--|
| ☐ | none |
| ☐ | as a product of composite numbers. |
| ☐ | as a product of prime numbers. QED |
| ☐ | as a product of prime and composite numbers. |

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Question # 5 of 10 (Start time: 06:20:03 PM, 17 June 2022)

Determine when a relation R on a set A is not antisymmetric.

Select the correct option

- | | |
|-----------------------|---|
| ☐ | There exists (a, b) in R such that (b, a) does not belong to R . |
| ☐ | There exists distinct elements $a, b \in A$ such that (a, b) and (b, a) belong to R . |
| ☐ | none |
| ☐ | There exists (a, b) in R such that (b, a) belong to R . |

Q E O

Question # 6 of 10 (Start time: 08:57:37 PM, 17 June 2022)

Total

Consider the partition $P = [\{1, 3, 5\}, \{2, 4, 6, 8\}, \{7, 9\}]$ of the set $S = \{1, 2, \dots, 8, 9\}$. Then the system of representatives of the partition P is _____.

Select the correct option

[Reload Math](#)

Q E O

- ☐ {5, 8, 7}
- ☐ {1, 2, 3}
- ☐ {3, 4, 6}
- ☐ {1, 3, 5}

[Click to Save Answer & Move to Next Question](#)

Let R be a relation on a set A with 3 elements. Then

Select the correct option

- ☐ $\text{transitive}(R) = R \cup R^2 \cup R^3$
- ☐ none
- ☐ $\text{transitive}(R) = R \cup R^2$
- ☐ $\text{transitive}(R) = R \cup R \cup R$

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Question # 9 of 10 (start time: 08:02:07 PM, 25 December 2021)

Consider two relations R and S . Then for the composition of relation $R \circ S$, the following is true:

Select the correct option

☒	<div>$R \circ S \neq S \circ R$</div> <div>Q E O</div>
☐	<div>$R \circ S = S \circ R$</div>

Question # 3 of 10 (Start time: 07:19:41 AM, 17 June 2022)

Given the set $A = \{0, 1, 2\}$ with the relations $R = \{(0, 1), (1, 0)\}$ and $S = \{(0, 0), (2, 1), (1, 0)\}$. Then $S \circ R =$ _____

Select the correct option

☐ $S \circ R = \{(0, 0), (0, 1), (2, 2)\}$

☐ $S \circ R = \{(0, 1), (1, 1), (2, 0)\}$

Q E O

Question # 8 of 10 (Start time: 09:19:20 AM, 16 June 2022)

Prime factorization of 90 is _____.

Select the correct option

- | | |
|-----------------------|--------------------------------|
| ☐ | $9 \times 5 \times 2$ |
| ☐ | $3 \times 3 \times 5 \times 2$ |
| ☐ | none of these |
| ☐ | $3 \times 15 \times 2$ |
- Q E O

Question # 10 of 10 (Start time: 09:20:41 AM, 16 June 2022)

Fundamental theorem of arithmetic is "Every integer $n > 1$ can be expressed uniquely _____."

Select the correct option

- | | |
|----------------------------------|--|
| ☐ | as a product of composite numbers. |
| ☐ | as a product of prime and composite numbers. |
| ☐ | none |
| ☒ | as a product of prime numbers. |

Q E O

Prime factorization of 28 is _____.

Select the correct option

☒	$2 \times 2 \times 7$	Q E O
☐	2×14	
☐	none of these	
☐	4×7	

Question # 5 of 10 (Start time: 09:16:05 AM, 16 June 2022)

Total Marks: 1

Let A, B, C be sets, and let R be a relation from A to B and let S be a relation from B to C . Then R and S give rise to a relation from A to C denoted by $R \circ S$ and defined as follows: $R \circ S = \{(a, c) : \text{there exist } b \in B \text{ for which } (a, b) \in R \text{ and } (b, c) \in S\}$. This relation $R \circ S$ is called the composition of R and S .

Select the correct option

Reload Math Equations

Given statement is true.



2 E 0

Given statement is false.



Click to Save Answer & Move to Next Question

Question # 1 of 10 (Start time: 09:13:04 AM, 16 June 2022)

Let m be a fixed positive integer. Two integers a and b are said to be congruent (modulo m) if m divides $a - b$.

Select the correct option

☐ Given statement is false.☒ Given statement is true.
$$Q \in \mathbb{Z}$$

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MTH104:Quiz No. 2

Question # 2 of 10 (Start time: 09:13:45 AM, 16 June 2022)

Find x and y given $(3x, x - y) = (3, 3)$.

Select the correct option

☐	(1, -2)
☐	(-1, 2)
☐	(1, 2)
☐	(-1, -2)

A E O

$$3x = 3$$

$$x - y = 3$$

Question # 10 of 10 (Start time: 07:21:10 PM, 17 June 2022)

Let $A = \{x, y\}$ and $B = \{ @, \$, \& \}$. Then number of elements in $A \times B$ is _____

Select the correct option

- | | |
|-----------------------|---|
| ☐ | 3 |
| ☐ | 5 |
| ☐ | 2 |
| ☐ | 6 |

2 E O

$$2 \times 3 = 6$$