

NAME: \_\_\_\_\_

*G.G.25: Know and apply the conditions under which a compound statement (conjunction, disjunction, conditional, biconditional) is true*

1. 060933ge, P.I. G.G.25

Given: Two is an even integer or three is an even integer.

Determine the truth value of this disjunction.  
Justify your answer.

2. 080120a, P.I. G.G.25

What is the smallest integer greater than 1 that is both the square of an integer and the cube of an integer?

[A] 8      [B] 64      [C] 9      [D] 36

3. 010501a, P.I. G.G.25

Stan was trying to guess Melanie's age. She told him her age was an even number and a multiple of three. What could be Melanie's age?

[A] 15      [B] 16      [C] 10      [D] 12

4. 080701a, P.I. G.G.25

Given the true statements: " $t$  is a multiple of 3" and " $t$  is even." What could be a value of  $t$ ?

[A] 8      [B] 9      [C] 15      [D] 24

5. 010803a, P.I. G.G.25

The statement " $a > 2$  and  $a < 5$ " is true when  $a$  is equal to

[A] 10      [B] 2      [C] 5      [D] 3

6. 010706a, P.I. G.G.25

The statement " $x \geq 4$  and  $2x - 4 < 6$ " is true when  $x$  is equal to

[A] 4      [B] 10      [C] 5      [D] 1

7. 060416a, P.I. G.G.25

The statement " $x$  is *not* the square of an integer and  $x$  is a multiple of 3" is true when  $x$  is equal to

[A] 9      [B] 32      [C] 36      [D] 18

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8. 010221a, P.I. G.G.25  
Seth is thinking of a number between 20 and 30. The number is prime and not more than 2 away from a perfect square. What is the number?
9. 010003a, P.I. G.G.25  
Mary says, "The number I am thinking of is divisible by 2 or it is divisible by 3." Mary's statement is false if the number she is thinking of is  
[A] 15      [B] 8      [C] 6      [D] 11
10. 080505a, P.I. G.G.25  
The statement " $x$  is divisible by 5 or  $x$  is divisible by 4" is *false* when  $x$  equals  
[A] 20      [B] 16      [C] 27      [D] 10
11. 060622a, P.I. G.G.25  
If  $x = 3$ , which statement is *false*?  
[A]  $x$  is prime and  $x$  is odd.  
[B]  $x$  is not prime and  $x$  is odd.  
[C]  $x$  is odd and  $2x$  is even.  
[D]  $x$  is odd or  $x$  is even.
12. 080819a, P.I. G.G.25  
The statement "Maya plays on the basketball team or Maya joins the ski club" is *false*. Which statement is true?  
[A] Maya plays on the basketball team and Maya does not join the ski club.  
[B] Maya plays on the basketball team and Maya joins the ski club.  
[C] Maya does not play on the basketball team and Maya joins the ski club.  
[D] Maya does not play on the basketball team and Maya does not join the ski club.
13. 010129a, P.I. G.G.25  
Mark says, "The number I see is odd." Jan says, "That same number is prime." The teacher says, "Mark is correct or Jan is correct." Some integers would make the teacher's statement true while other integers would make it false. Give and explain one example of when the teacher's statement is true. Give and explain one example of when the teacher's statement is false.

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[2] True, and an appropriate justification is written.

[1] True, but the justification is incorrect.

or [1] One conceptual error is made in evaluating the disjunction, but an appropriate justification is written.

[0] True, but no justification is written.

or [0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an

[1] obviously incorrect procedure.

[2] B \_\_\_\_\_

[3] D \_\_\_\_\_

[4] D \_\_\_\_\_

[5] D \_\_\_\_\_

[6] A \_\_\_\_\_

[7] D \_\_\_\_\_

[2] 23, and appropriate work is shown.

[1] Appropriate work is shown, but no answer or an incorrect answer is found.

or [1] 23, but no work is shown.

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously

[8] incorrect procedure.

[9] D \_\_\_\_\_

[10] C \_\_\_\_\_

[11] B \_\_\_\_\_

[12] D \_\_\_\_\_

[3] At least one example is shown that makes the statement true, such as 2, 3, 5, 7, 9, or a defined variable; and one example is shown that makes the statement false, such as any even number other than 2, with a correct explanation that shows that the student can recognize odd numbers and prime numbers. The explanation can be in words or as a Venn diagram.

[2] Two correct examples are shown, one that shows the statement is true and one that shows the statement is false, but no explanation or an inappropriate explanation is given.

or [2] Only one correct example is shown, but an appropriate explanation is given.

[1] Only one correct example is shown, and no explanation or an incorrect explanation is given.

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously

[13] incorrect procedure.