19 Which number serves as a counterexample to the statement below?

> All positive integers are divisible by 2 or 3.

A   100

B   57

C   30

D   25

CSG10197

---

20 What is the conclusion of the statement in the box below?

> If $x^2 = 4$, then $x = -2$ or $x = 2$.

A $x^2 = 4$

B $x = -2$

C $x = 2$

D $x = -2$ or $x = 2$

CSA30045

---

21 Which of the following is a valid conclusion to the statement "If a student is a high school band member, then the student is a good musician"?

A   All good musicians are high school band members.

B   A student is a high school band member.

C   All students are good musicians.

D   All high school band members are good musicians.

CSA30095

22 The chart below shows an expression evaluated for four different values of x.

x	$x^2 + x + 5$
1	7
2	11
6	47
7	61

Josiah concluded that for all positive values of x, $x^2 + x + 5$ produces a prime number. Which value of x serves as a counterexample to prove Josiah's conclusion false?

A   5

B   11

C   16

D   21

CSA20027

---

23 John's solution to an equation is shown below.

Given: $x^2 + 5x + 6 = 0$

Step 1: $(x + 2)(x + 3) = 0$

Step 2: $x + 2 = 0$ or $x + 3 = 0$

Step 3: $x = -2$ or $x = -3$

Which property of real numbers did John use for Step 2?

A   multiplication property of equality

B   zero product property of multiplication

C   commutative property of multiplication

D   distributive property of multiplication over addition

CSA20034

Answers

19	D
20	D
21	D
22	A
23	B