



Use logical elimination

1

You are putting together a meal. You choose one main (burger, pasta, chicken) and one dessert (ice cream, cheesecake). If the dessert is ice cream, then the main must be pasta.

- A Multiply the choices for every option and ignore the restriction.
B Subtract the number of options from the total number of choices.
C Add together the number of choices for every option.
D Split the count into two cases, multiply within each case, then add the two results.

2

Which set of values satisfies this inequality?

$$(x-1)^4(x-2)(x-4)^4 < 0$$

- A $(1, 2)$
B $(-\infty, 2) \cup (2, \infty)$
C $(-\infty, 2)$
D $(2, \infty)$

3

You are putting together an avatar. You choose one hairstyle (short, long, curly), one eye color (brown, light blue), and one hat color (red, navy, black, white). If the eye color is light blue, then the hairstyle must be long.

- | | |
|------|------|
| A 24 | B 16 |
| C 9 | D 17 |

4

Which set of values satisfies this inequality?

$$\frac{(x+3)(x+2)^4}{x} > 0$$

- A $(-3, 0)$
B $(-\infty, -3) \cup (-3, 0) \cup (0, \infty)$
C $(-3, -2) \cup (0, \infty)$
D $(-\infty, -3) \cup (0, \infty)$

5

Which set of values satisfies this inequality?

$$\frac{(x+3)^3(x-3)^2(x-4)}{x-4} > 0$$

- A $(-3, \infty)$
B $(-\infty, -3)$
C $(-\infty, -3) \cup (3, \infty)$
D $(-\infty, -3) \cup (-3, \infty)$

6

Each letter is a digit (0-9). Is the digit '2' possible in the box with a question mark?

$$\begin{array}{r} \text{A?} \\ \text{C5} \\ \times \\ \hline \text{EFG0} \end{array}$$

- A Yes
B No



7

$$\begin{array}{r} A0 \\ CD \\ \times \\ \hline EFG? \end{array}$$

8

A 4	B 5
C 6	D 7

9

$$\frac{x^3(x-1)^4}{x+4} < 0$$

A

$$(-\infty, -4) \cup (0, 1)$$

B

$$(-\infty, -4) \cup (-4, 0) \cup (0, \infty)$$

C

$$(-\infty, -4) \cup (0, \infty)$$

D

$(-4, 0)$

10

$$\frac{(x+1)^5(x-1)^3(x-3)^2}{x+4} > 0$$

A

$$(-\infty, -4) \cup (-1, 1)$$

B

$$(-\infty, -4) \cup (-4, -1) \cup (-1, 1) \cup (1, \infty)$$

C

$$(-\infty, -4) \cup (-1, 1) \cup (3, \infty)$$

D

$$(-4, -1) \cup (1, \infty)$$

11

$$\begin{array}{r} \boxed{A} \boxed{B} \boxed{8} \\ \times \quad \boxed{D} \boxed{?} \\ \hline \boxed{F} \boxed{G} \boxed{H} \boxed{2} \end{array}$$

12

$$\begin{array}{r} \text{A} \text{B} \\ \times \text{C} 5 \\ \hline \text{E} \text{F} \text{G} ? \end{array}$$

B	No
---	----