

INKMATHS FLASHCARDS

Spot the error

6 cards · fronts and backs

Print double-sided, flipping on the long edge, and each answer lands behind its question. Cut along the card borders.

Definitions in precise wording, the standard results the formulae booklet does not print, a check-yourself question per topic, and the slips that lose marks. The same cards run on the website with spaced-repetition scheduling, at inkmaths.co.uk/flashcards.

SPOT THE ERROR

Say what is wrong with this claim:

$\sqrt{(a^2 + b^2)}$ simplifies to $a + b$.

SPOT THE ERROR

SPOT THE ERROR

Say what is wrong with this claim:

$(x + 3)^2 = x^2 + 9$.

SPOT THE ERROR

SPOT THE ERROR

Say what is wrong with this claim:

In $(x^2 + 5x)/x^2$, the x^2 terms cancel to leave $1 + 5x$.

SPOT THE ERROR

SPOT THE ERROR

Say what is wrong with this claim:

If $\sin x = 0.5$ then $x = 30^\circ$ is the complete answer.

SPOT THE ERROR

SPOT THE ERROR

Say what is wrong with this claim:

Dividing both sides of $x^2 = 4x$ by x gives $x = 4$, done.

SPOT THE ERROR

SPOT THE ERROR

Say what is wrong with this claim:

$\ln(a)/\ln(b)$ simplifies to $\ln(a/b)$.

SPOT THE ERROR

SPOT THE ERROR

Squaring a sum needs the cross term: $(x + 3)^2 = x^2 + 6x + 9$. The slip drops $2 \times x \times 3$. Expanding the bracket term by term makes the middle term impossible to lose.

SPOT THE ERROR

SPOT THE ERROR

Square roots do not distribute over addition. Try $a = 3$, $b = 4$: the left side is 5, the right side is 7. Only $\sqrt{a^2b^2} = ab$ behaves like that, because the inside is a product.

SPOT THE ERROR

SPOT THE ERROR

Sine repeats: in 0° to 360° alone, $x = 30^\circ$ and $x = 150^\circ$ both work, and the general solution adds full turns to each. Always read the given interval and use the sine curve or CAST to find every solution inside it.

SPOT THE ERROR

SPOT THE ERROR

Only common factors of the whole numerator and denominator cancel. Factorise first: $x(x + 5)/x^2 = (x + 5)/x$, which is $1 + 5/x$. Cancelling terms that are added, rather than factors that are multiplied, is the single most common algebra slip.

SPOT THE ERROR

SPOT THE ERROR

The quotient law is $\ln a - \ln b = \ln(a/b)$: a difference of logs, not a quotient of logs. $\ln(a)/\ln(b)$ is the change-of-base form of log base b of a , and it does not simplify further.

SPOT THE ERROR

SPOT THE ERROR

Dividing by x silently assumes $x \neq 0$ and throws away the solution $x = 0$. Move everything to one side and factorise: $x(x - 4) = 0$, so $x = 0$ or $x = 4$.

SPOT THE ERROR