
Common Algebra Mistakes

Fragment: Rational Expression

The Mistake Fragment

Find the algebra mistake:

$$\frac{1}{2}\pi \frac{2A}{4+\pi} = \frac{2A}{8\pi + \pi^2}$$

Need a hint? Look carefully at the red part of the algebra:

$$\frac{1}{2}\pi \frac{2A}{4+\pi} = \frac{2A}{8\pi + \pi^2}$$

The Correction

$$\frac{1}{2}\pi \frac{2A}{4+\pi} = \frac{2A\pi}{2(4+\pi)} = \frac{2A\pi}{8+2\pi}$$

An Explanation

There are two mistakes.

The first π is *not* part of the denominator and should be combined with the *numerator* of the second fraction.

The denominators have not been combined correctly - the 2 in the first denominator has to be *distributed* across both the 4 and the π in the second denominator (or left in factored form, as shown in the middle step of the corrected version).