Answer on Question #74472 – Math – Algebra

Question

Express $-\dfrac{7}{20} \times \dfrac{5}{28} \div \left(-\dfrac{2}{16}\right)$ as a single, simplified fraction.

Solution

First of all, we multiply the first two fractions (the product of a negative and a positive number is a negative number).

$$-\frac{7}{20} \times \frac{5}{28} = -\frac{7 \times 5}{20 \times 28}$$

We express multipliers as the product of smaller integers

$$-\frac{7 \times 5}{20 \times 28} = -\frac{7 \times 5}{5 \times 4 \times 7 \times 4}$$

and now cancel common factors

$$-\frac{7 \times 5}{5 \times 4 \times 7 \times 4} = -\frac{1}{4 \times 4}.$$

Let us now divide the result by the third fraction (division is the same as multiplication by the inverse fraction)

$$-\frac{1}{4 \times 4} \div \left(-\frac{2}{16}\right) = -\frac{1}{4 \times 4} \times \left(-\frac{16}{2}\right)$$

The product of two negative numbers is a positive number. Cancelling common factors we come to the result

$$-\frac{1}{4 \times 4} \times \left(-\frac{16}{2}\right) = \frac{1 \times 16}{4 \times 4 \times 2} = \frac{16}{16 \times 2} = \frac{1}{2}$$

Answer: $\dfrac{1}{2}$.