

Grade 7 Maths Worksheet

Expressions and surds

Questions:

1. Show that the three expressions below gives exactly the same numerical answer:

i) $\left(\frac{3}{5} - \frac{1}{2}\right) + 2 - \left(\frac{5}{6} + \frac{2}{3}\right)$

ii) $\frac{2x-3}{5-x}$ where $x=3$

iii) $3\sqrt{25} - \frac{72}{5}$

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Solution

1. **Fraction:**

$$\left(\frac{3}{5} - \frac{1}{2}\right) + 2 - \left(\frac{5}{6} + \frac{2}{3}\right) = \left(\frac{6-5}{10}\right) + 2 - \left(\frac{5+4}{6}\right) = \left(\frac{1}{10}\right) + 2 - \left(\frac{9}{6}\right) = \frac{3+60-45}{30} = \frac{3}{5}$$

Expression:

$$\frac{2x-3}{8-x} \Big|_{x=3} = \frac{2(3)-3}{8-(3)} = \frac{3}{5}$$

Surd:

$$3\sqrt{25} - \frac{72}{5} = 3 \times 5 - \frac{72}{5} = 15 - \frac{72}{5} = \frac{75-72}{5} = \frac{3}{5}$$

This question is very layered and the chances of making a very elementary mistake is large. The fact that the question is prompting the learner to the equivalence of the answers is an indication of whether there is a mistake in the learners' calculations or not.

Appendix of Assignment Tools

Addition and subtraction of fractions using the LCD

Distribution

Substitution

Evaluation

Simplifying a quotient

Surds

Congruence