

### Dictate and Prove card game

Draw one card from the deck for each student. This card shows a calculation and its final result. Each student firstly calculates in his copybook to prove the final result displayed on the card. One student dictates his card aloud to the class while others write down in their copybook.

Teacher checks that all students have written the correct calculation. If necessary, student finally proves the calculation to all onto the blackboard. \*

### Identify task in the given statement.

For each card given to the student ask to identify the task among the following.

- Simplify square roots.
  - Calculate with powers of ten.
  - Calculate using square roots and identities.
  - Multiply out symbolic expressions.
- \*

$$\frac{10^8}{10^{-3}} = 10^{11}$$

\*

$$10^{14} \times 10^{-14} = 1$$

\*

$$(10^3)^5 = 10^{15}$$

\*

$$\frac{10^5 \times 10^{-7}}{10^3} = \frac{1}{10^5}$$

\*

$$\sqrt{6300} = 30\sqrt{7}$$

\*

$$\sqrt{98} = 7\sqrt{2}$$

\*

$$\sqrt{726} = 11\sqrt{6}$$

\*

$$\sqrt{1690} = 13\sqrt{10}$$

\*

$$3 \times 10^{-5} + 7 \times 10^2 \\ = 700.00003$$

\*

$$1.718 \times 10^{-5} \\ = 0.00001718$$

\*

$$5 \times 10^{-3} + 38 \times 10^2 \\ = 3,800.005$$

\*

$$-7 \times 10^6 - 4 \times 10^{-4} \\ = -7,000,000.0004$$

\*

$$4(x + 1)^2 \\ = 4x^2 + 8x + 4$$

\*

$$-3(2x + 5)^2 \\ = -12x^2 - 60x - 75$$

\*

$$\begin{aligned} & -2(3x - 5)^2 \\ & = -18x^2 + 60x - 50 \end{aligned}$$

\*

$$\begin{aligned} & (5x - 3)^2 \\ & = 25x^2 - 30x + 9 \end{aligned}$$

\*

$$(\sqrt{15} - \sqrt{3})(\sqrt{15} + \sqrt{3}) = 12$$

\*

$$(\sqrt{10} - \sqrt{7})(\sqrt{10} + \sqrt{7}) = 3$$

\*

$$(\sqrt{5} + \sqrt{3})(\sqrt{5} - \sqrt{3}) = 2$$

\*

$$(3\sqrt{2} - 4\sqrt{5})(3\sqrt{2} - 4\sqrt{5}) = -62$$

\*

$$(9 - \sqrt{3})^2 = 84 - 18\sqrt{3}$$

\*

$$(3 + \sqrt{5})^2 = 14 + 6\sqrt{5}$$

\*

$$(\sqrt{7} + 4)^2 = 23 + 8\sqrt{7}$$

\*

$$(3\sqrt{2} - 2)^2 = 22 - 12\sqrt{2}$$

\*

$$\begin{aligned} & 9x^2 - 4 \\ = & (3x - 2)(3x + 2) \end{aligned}$$

\*

$$\begin{aligned} & 100x^2 - 49 \\ = & (10x - 7)(10x + 7) \end{aligned}$$

\*

$$\begin{aligned} & 121y^2 - 64 \\ = & (11y - 8)(11y + 8) \end{aligned}$$

\*

$$\begin{aligned} & 64t^2 - 169 \\ = & (8t - 13)(8t + 13) \end{aligned}$$

\*

$$\begin{aligned} & (\sqrt{x} + 8)^2 \\ = & x + 16\sqrt{x} + 64 \end{aligned}$$

\*

$$\begin{aligned} & (\sqrt{x} - 3)^2 \\ = & x - 6\sqrt{x} + 9 \end{aligned}$$

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