

APPLICATIONS OF DERIVATIVE FOR BEGINNERS

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FUNNY PICTURE

Answer the questions which are linked to the buttons on the gameboard on the next page. You have two attempts to find the correct answer. The correct answer unhides a part of a hidden picture. If you fail, the corresponding part of the picture will be dimmed.

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$$e^{ix} = \sum_{n=0}^{\infty} \frac{(ix)^n}{n!} = 1 + ix + \frac{(ix)^2}{2!} + \frac{(ix)^3}{3!} + \dots$$

$$= 1 + ix - \frac{x^2}{2!} + \frac{ix^3}{3!} + \frac{x^4}{4!} - \frac{ix^5}{5!} + \frac{x^6}{6!} - \dots$$

$$= \left(1 - \frac{x^2}{2!} + \frac{x^4}{4!} - \frac{x^6}{6!} + \dots \right) + i \left(x - \frac{x^3}{3!} + \frac{x^5}{5!} - \frac{x^7}{7!} + \dots \right) = \dots$$

$$= \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n}}{(2n)!} + i \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n+1}}{(2n+1)!}$$

Math consists of 50 % formulas,
50 % evidence
and 50 % imagination!

$$(2x^2 + 14x - 5x - 24) \cdot (2x - 3) =$$

$$= (2x^2 - 3x^2) = x^2 + 7x + 8$$

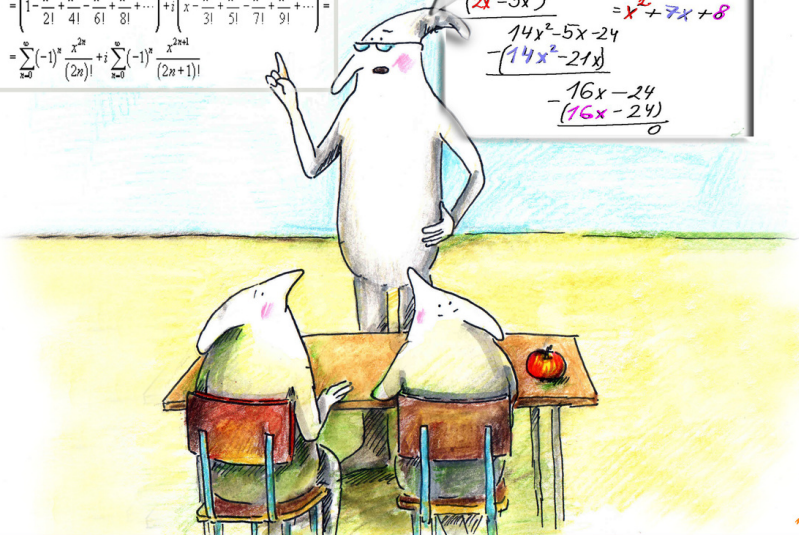
$$14x^2 - 5x - 24$$

$$-(14x^2 - 21x)$$

$$-16x - 24$$

$$\underline{-(16x - 24)}$$

$$0$$



mlm

























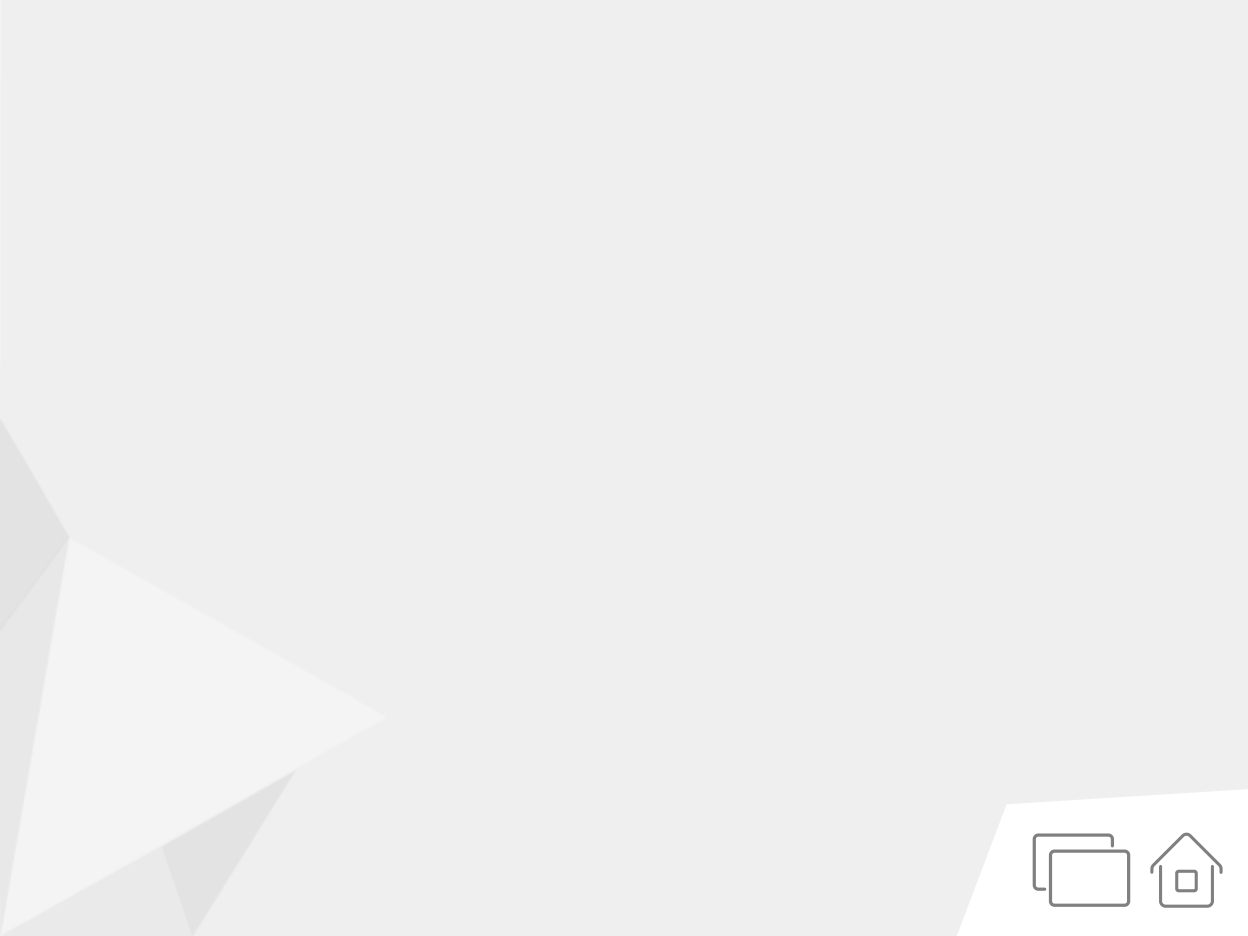
































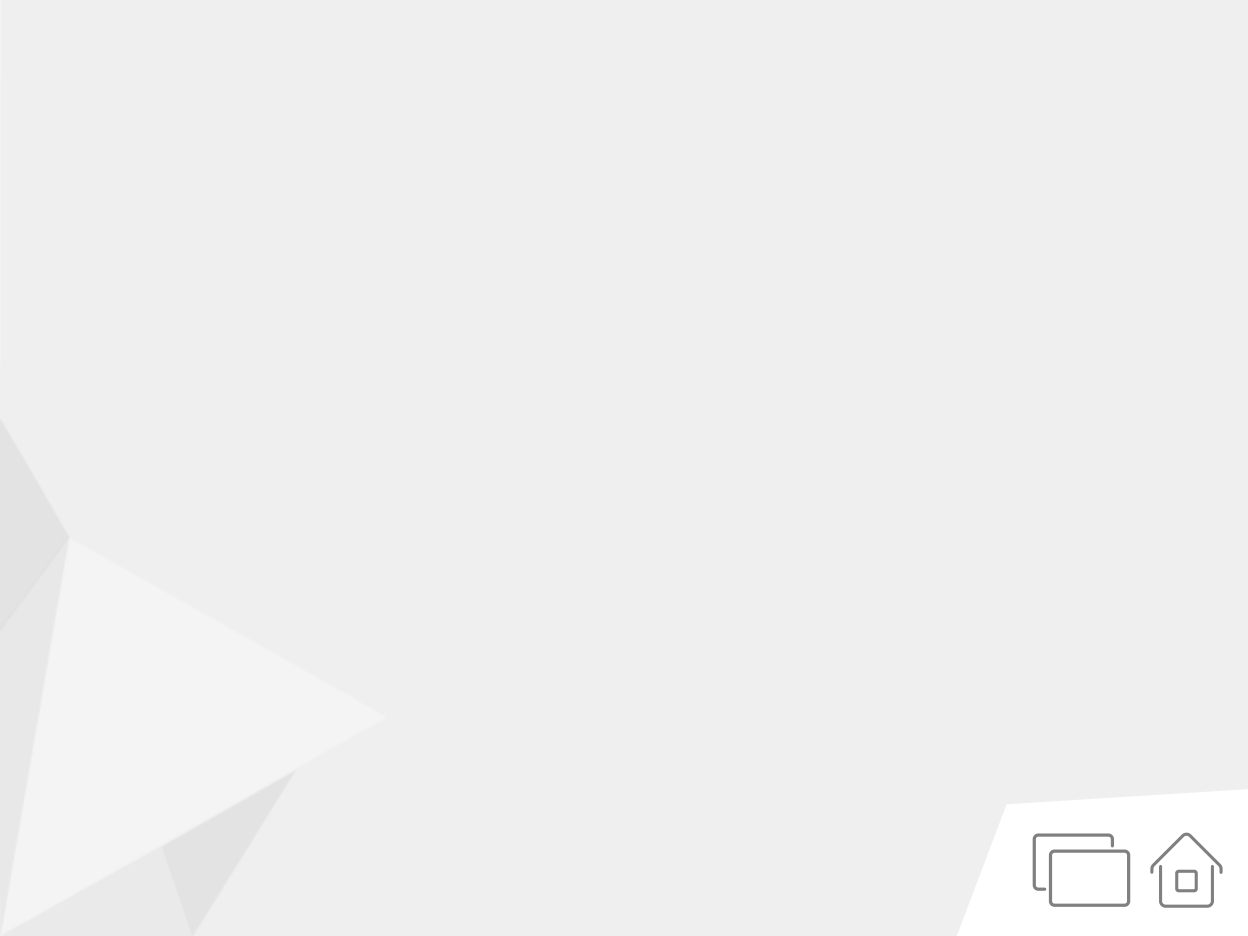


































This is the last Page of the puzzle. You can return to the gameboard by clicking [here](#).

