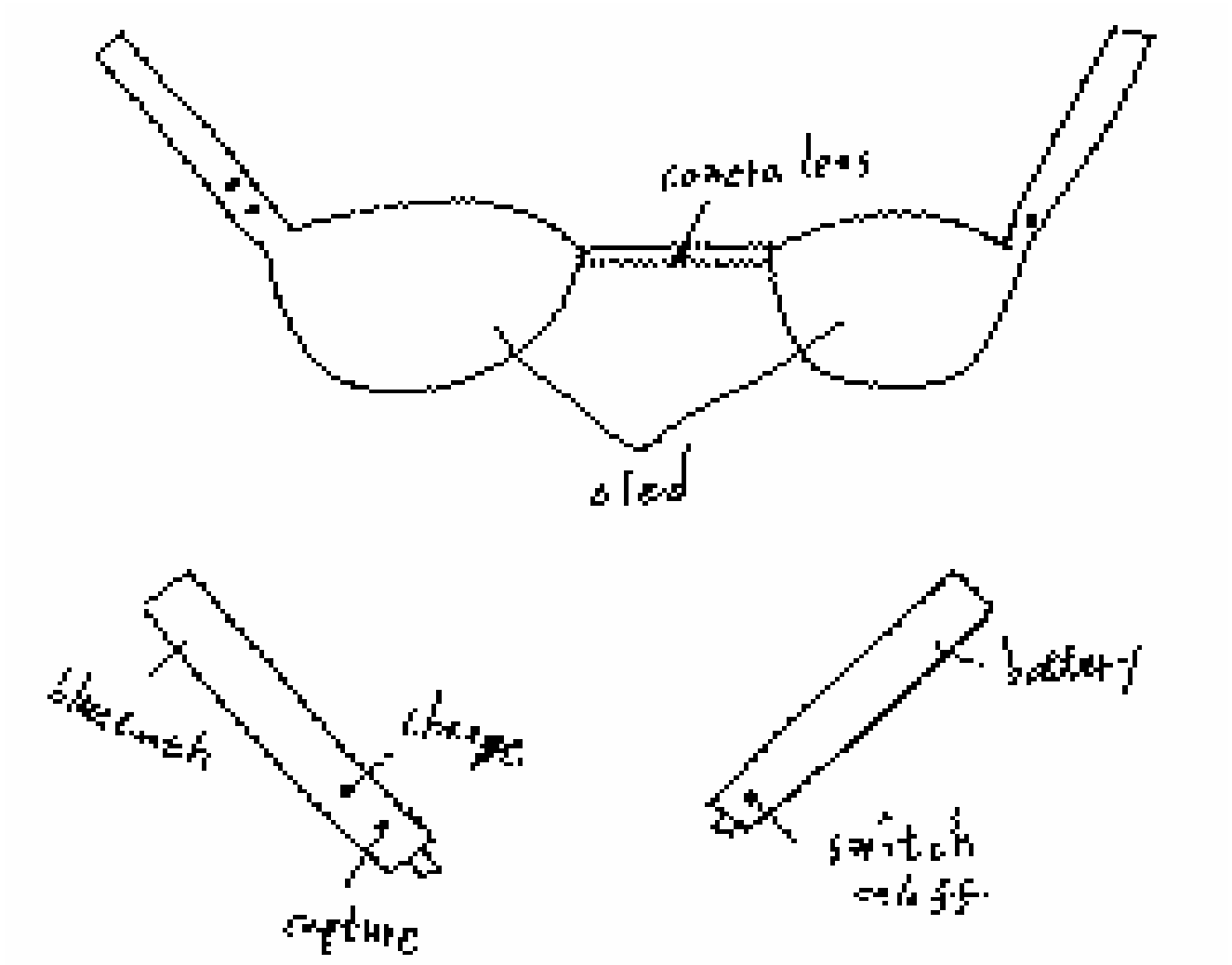


정답이 보이는 안경

- 1. 안경에 달린 카메라로 스캔한다.
- 2. 스캔한 이미지를 딥러닝을 이용해서 읽어 들인다.
- 3. 율프람알파를 이용해서 답을 얻어낸다.
- 4. 그 답을 비춰준다.

안경 디자인



개발단계

- A단계

카메라 렌즈로 이미지를 읽어 들이는 작업
얻어온 정보를 비춰주는 작업

- B단계

Wolfram Alpha와 연결시키는 작업

- C단계

얻어온 이미지를 해석하는 작업(딥 러닝 이용)

WolframAlpha[™] computational knowledge engine.

Enter what you want to calculate or know about:



 Web Apps  Examples  Random

Explore some of the things Wolfram|Alpha can do:

 Mathematics	 Step-by-step Solutions	 Words & Linguistics	 Units & Measures	 Statistical & Data Analysis
 People & History	 Dates & Times	 Chemistry	 Culture & Media	 Money & Finance
 Physics	 Art & Design	 Socioeconomic Data	 Astronomy	 Music
 Health & Medicine	 Engineering	 Places & Geography	 Food & Nutrition	 Education
 Materials	 Earth Sciences	 Life Sciences	 Weather & Meteorology	 Technological World
 Sports & Games	 Computational Sciences	 Transportation	 Web & Computer Systems	 Surprises

$$1^2 - 2^2 + 3^2 - 4^2 + 5^2 - 6^2 + 7^2 - 8^2 + 9^2 - 10^2$$



Web Apps

Examples

Random

Input:

$$1^2 - 2^2 + 3^2 - 4^2 + 5^2 - 6^2 + 7^2 - 8^2 + 9^2 - 10^2$$

Open code

Result:

Step-by-step solution

-55

100!



Web Apps Examples Random

Input:

100!

[Open code](#)

$n!$ is the factorial function

Result:

93 326 215 443 944 152 681 699 238 856 266 700 490 715 968 264 381 621 468 592 ∙
963 895 217 599 993 229 915 608 941 463 976 156 518 286 253 697 920 827 223 758 ∙
251 185 210 916 864 000 000 000 000 000 000 000 000

Decimal approximation:

[More digits](#)

$9.332621544394415268169923885626670049071596826438162... \times 10^{157}$



Number length:

158 decimal digits



$y = -\text{abs}(\sin 3x + 1) + 2$



Examples Random

Input:

$$y = -|\sin(3x) + 1| + 2$$

$|z|$ is the absolute value of z »

Global maxima:

Approximate forms

$$\max\{y = -|\sin(3x) + 1| + 2\} = 2 \text{ at } x = -\frac{\pi}{6} + \frac{2n\pi}{3} \text{ for integer } n$$

$$\max\{y = -|\sin(3x) + 1| + 2\} = 2 \text{ at } x = \frac{\pi}{2} + \frac{2n\pi}{3} \text{ for integer } n$$

Global minima:

Approximate form

$$\min\{y = -|\sin(3x) + 1| + 2\} = 0 \text{ at } x = \frac{\pi}{6} + \frac{2n\pi}{3} \text{ for integer } n$$

derivate tanx



[Examples](#) [Random](#)

Derivative:

[Step-by-step solution](#)

$$\frac{d}{dx}(\tan(x)) = \sec^2(x)$$

$\sec(x)$ is the secant function

sum $(1/2)^n$ from $n=1$ to 10



[Examples](#) [Random](#)

Sum:

$$\sum_{n=1}^{10} \left(\frac{1}{2}\right)^n = \frac{1023}{1024}$$

integral tanx from 0 to pi/4



Examples ↻ Random

Definite integral:

More digits

Step-by-step solution

$$\int_0^{\pi/4} \tan(x) dx = \frac{\log(2)}{2} \approx 0.34657$$

$\log(x)$ is the natural logarithm

Mg + 2HCl



Web Apps Examples ↻ Random

Input interpretation:

Mg (magnesium) + 2 HCl (hydrochloric acid) → (unspecified products)

Sample reactions:

Hide formulas

Mg (magnesium) + 2 HCl (hydrochloric acid) → MgCl₂ (magnesium chloride) + H₂ (hydrogen)