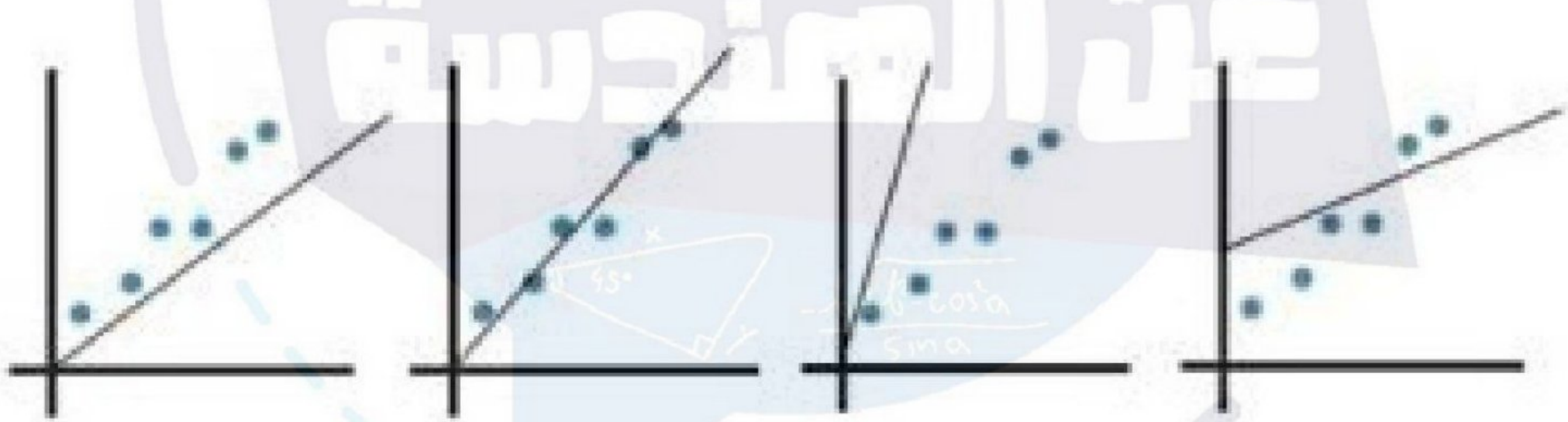
9- which of the following lines represents the best fit representation for the points *



A ✓

11- If the hight of a cylinder is measured to be 2.50 cm with uncertainty of 0.02 cm and the radius of this cylinder is measured as 0.050 cm with uncertainty of 0.003 cm. then the uncertainty of the volume for this cylinder is: *

○ 0.12

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[2] $h = 2.50 \pm 0.02$ cm

$r = 0.05 \pm 0.003$ cm

- $V = \pi r^2 h$

$V = 0.020$

$$\frac{\Delta V}{V} = \sqrt{\left(\frac{\Delta h}{h}\right)^2 + \left(2\frac{\Delta r}{r}\right)^2}$$

$$\Delta V = 0.02 \times \sqrt{\left(\frac{0.02}{2.5}\right)^2 + \left(2 \times \frac{0.003}{0.05}\right)^2}$$

$$= 0.002$$

mproperly zeroed instrument, this error is:

a. a personal error

b. both systematic and personal error

c. none of the above

d. a random error

e. a systematic error ✓

Clear my choice

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8

ut of

Two measured quantities are (A=10±0.10) and (B=15±0.15) wh
if $C=A^2 B$

- a. 33.5
- b. 2.5
- c. 2.12
- d. 3.12
- e. zero

Clear my choice

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- $C = (10)^2 * 15$

$C = 1500$

- $\frac{\Delta C}{C} = \sqrt{\left(\frac{\Delta B}{B}\right)^2 + \left(2\frac{\Delta a}{a}\right)^2}$

$\Delta C = 1500 * \sqrt{\left(\frac{0.15}{15}\right)^2 + \left(\frac{2 * 0.1}{10}\right)^2}$

$= 33.5$

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A rectangle (مستطيل) of length (L) equals 25cm, and width (W) equals 7 cm. If the uncertainty in
ength (ΔL) is 0.5 cm, and the uncertainty in measuring the width (ΔW) is 0.1 cm. The uncertaint
ΔA) of this rectangle is:

- a. 3.2 cm^2
- b. 6.3 cm^2
- c. 8.1 cm^2
- d. 9.8 cm^2
- e. 4.3 cm^2

Clear my choice

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5 - $A = 25 \times 7$

$= 175$

- $\frac{\Delta A}{A} = \sqrt{\left(\frac{0.5}{25}\right)^2 + \left(\frac{0.1}{7}\right)^2}$

$\Delta A = 4.3\ cm^2$

Not yet answered

Marked out of 2.50

Flag question

Unpredictable fluctuations in temperature or other external factors is considered as:

- a. Personal error
- b. Random error
- c. Systematic error

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The number of significant digits in (10.2010) is:

- a. 7
- b. 6
- c. 5
- d. 3
- e. 4

Clear my choice

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A rectangle (مستطيل) of length (L) equals 20 cm, and width (W) equals 5 c
uncertainty in measuring the length (ΔL) is 0.5 cm, and the uncertainty i
the width (ΔW) is 0.1 cm. The uncertainty in the area (ΔA) of this rectangl

- a. 8.1 cm^2
- b. 6.3 cm^2
- c. 9.8 cm^2
- d. 4.3 cm^2
- e. 3.2 cm^2

Clear my choice

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[8] $A = 20 \times 5$

$= 100$

$$\frac{\Delta A}{100} = \sqrt{\left(\frac{0.5}{20}\right)^2 + \left(\frac{0.1}{5}\right)^2}$$

$$\Delta A = 3.2 \text{ cm}^2$$

The number of significant digits in (10.210) is:

- a. 3
- b. 4
- c. 5 ✓
- d. 6
- e. 7

Clear my choice

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5- one of the students measured the thickness of a sheet at different points along one of the sides as shown in the figure, the the results were as shown in the table. the mean value of the sheet's thickness is: *

point	Thickness (mm)
a	1.30
b	1.29
c	1.29
d	1.28

- ○ 1.30 ± 0.04
- ○ 1.29 ± 0.04
- ◉ 1.29 ± 0.01
- ○ 1.30 ± 0.01

$$\bar{X} = \frac{1.30 + 1.29 + 1.29 + 1.28}{4}$$

$$= 1.29$$

$$G = \sqrt{\frac{\Sigma(x_i - \bar{x})^2}{N-1}} = \sqrt{\frac{0.002}{3}} = 0.008$$

$$\text{error} = \sqrt{\frac{G}{N}} = 0.04$$

$$\bar{X} = 1.29 \pm 0.04$$ ✱