



SIMI GRADE
9 revision...

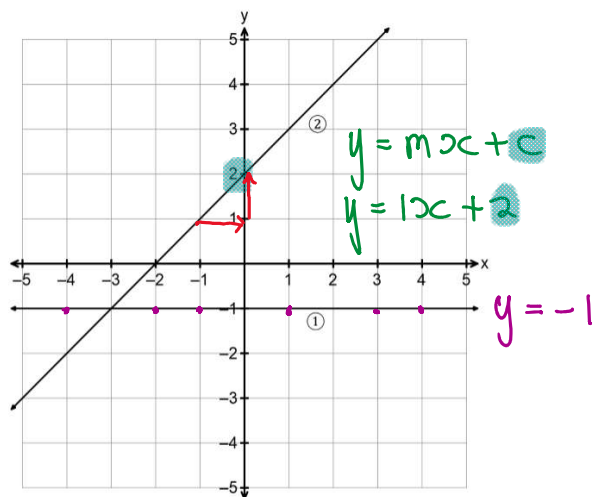
SIMI GRADE 9 REVISION – 3rd September 2026

SECTION A : MULTIPLE CHOICE QUESTIONS

QUESTION 1

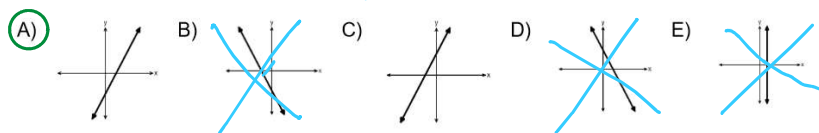
Circle the letter which corresponds to the correct answer.

1.1 What are the equations of the two given graphs: (1)



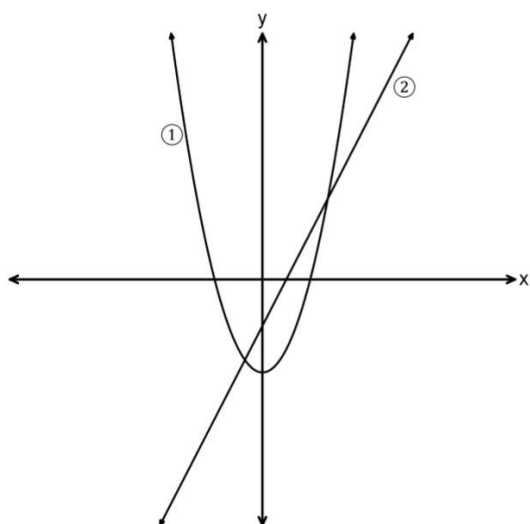
- A) ① ~~$x = -1$~~ ② ~~$y = x + 2$~~ B) ① $y = -1$ ② $y = x - 2$ C) ① $y = -1$ ② $y = x + 2$ D) ① ~~$y = 2$~~ ② ~~$y = -1$~~ E) ① $y = -1$ ② $y = 2x$

1.2 Which graph represents $y = mx + c$ with $m > 0$ and $c < 0$? (1)



1.3 Consider the graphs as shown: (1)





Which statement is true?

- A – both are linear
- B – neither is linear
- C - ① is linear but ② is not
- D - ② is linear but ① is not

A) A

B) B

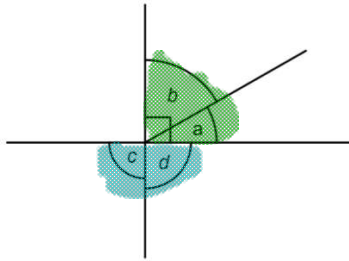
C) C

☒ D) D

E) None of them

1.4

(1)



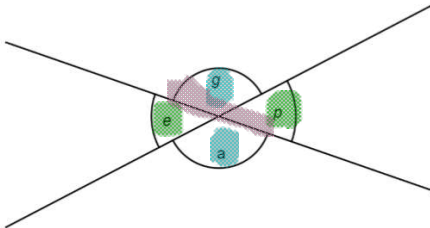
Which statement is true?

- A – b and d are vertically opposite angles
- B – a and b are supplementary, and c and d are complementary
- C – a and c are vertically opposite
- D – a and b are complementary, and c and d are supplementary
- E – a and c are corresponding angles

A) A B) B C) C **D) D** E) E

1.5

(1)

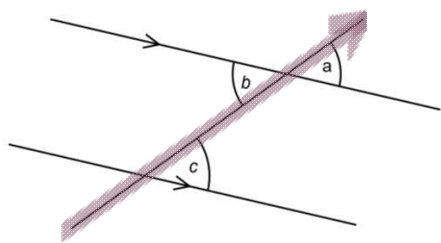


Which statement is true?

- ~~X~~ A – g and p are vertically opposite
- ✓** B – a and g are vertically opposite, and g and p are adjacent
- ~~X~~ C – a and g are adjacent, and e and p are vertically opposite
- ~~X~~ D – e and p are adjacent
- E – none of them

A) E **B) B** C) C D) D E) E

1.6



(1)

*c, b alternate
a, c corresponding*

Which statement is true?

- ☒ A – a and c are corresponding angles and b and c are co-interior angles
☒ B – a and c are alternate angles and b and c are co-interior angles
☒ C – a and c are alternate angles and b and c are co-interior angles
☒ D – a and c are co-interior angles and b and c are alternate angles
☒ E – a and c are corresponding angles and b and c are alternate angles

A) A B) B C) C D) D **E) E**

1.7 Which statements are true

(1)

- ☒ A – if two triangles have corresponding sides equal, they are congruent
☒ B – if two triangles have corresponding angles equal, they are congruent

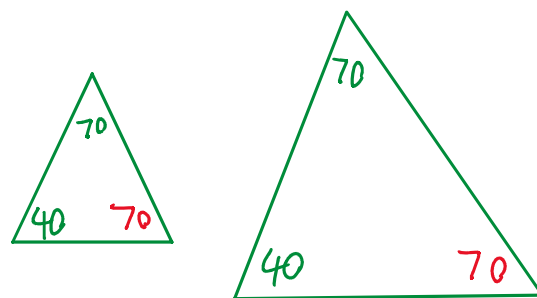
A) neither B) both C) B only **D) A only** E) cannot tell

1.8 In triangle ① and triangle ② each has a 40° angle and a 70° angle.

(1)

Which is true?

- A) They are similar** B) They are not similar C) They are congruent D) They are congruent and similar E) None of them



1.9 For a kite, which statements are true?

(1)

- ☒ A – there are two pairs of adjacent sides equal
☒ B – the longer diagonal bisects the shorter one
☒ C – the diagonals bisect one another

A) A and B B) B and C C) All of them D) A and C E) None of them

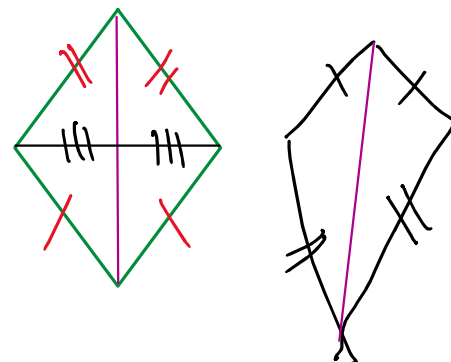
1.10 For a trapezium which statements are true

(1)

- ☒ A – one pair of opposite sides is parallel
☒ B – one pair of opposite sides is equal
☒ C – both pairs of opposite sides are equal
☒ D – both pairs of opposite sides are parallel

A) A and C B) B and D C) C only D) D only **E) A only**

[10]



SECTION B : FREE RESPONSE / OPEN ENDED QUESTIONS

QUESTION 2 – GRAPHS

2.1 Find the x-intercept and the y-intercept of $y = 3x - 6$

y -int let $x = 0$ $y = 3(0) - 6$
 x -int let $y = 0$ $0 = 3x - 6$ $6 = 3x$ $2 = x$

Write your answers as points by filling in the gaps below:

x-intercept (2; 0) y-intercept (0; -6)

2.2 Determine the gradient of the function

$$4x + 2y = 8$$

$$2y = -4x + 8$$

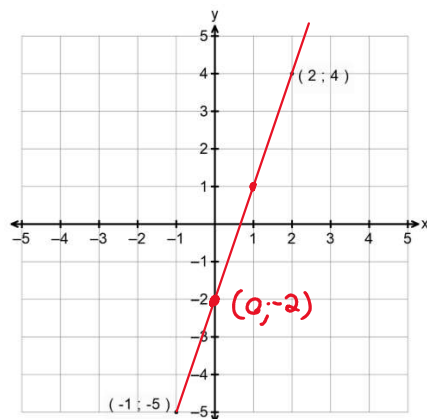
$$y = mx + c$$

$$y = -2x + 4$$

$$\text{gradient} = -2$$

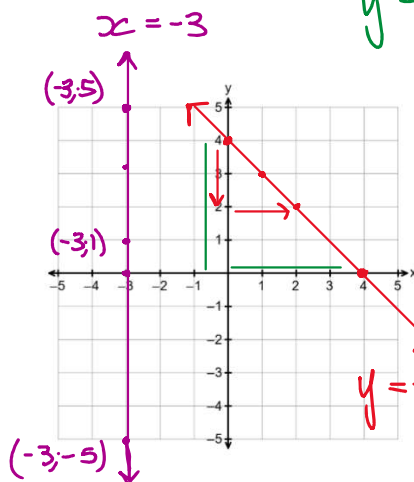
2.3 Complete the following table and then plot and label the points on the axes provided: (4)
Two points have been done for you!

x	-1	0	1	2
$y = 3x - 2$	-5	-2	1	4



- 2.4 Draw the graphs of $x = -3$ and $y = -x + 4$ on the axes below, clearly labelling which is which.

$$x = -3$$



$$y = mx + c$$

$$y = -1x + 4$$

let's find
x-int

let $y = 0$

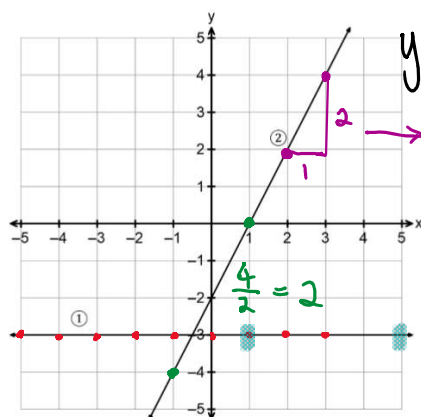
$$0 = -x + 4$$

$$x = 4$$

$$y = -x + 4$$

- 2.5 Determine the equations of the graphs below:

(4)



$$y = mx + c$$

$$\rightarrow \text{gradient} = \frac{2}{1} = 2$$

$$\text{gradient} = 0$$

$$= \frac{\text{rise}}{\text{run}} = \frac{0}{4} = 0$$

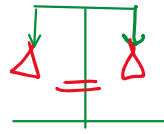
① $y = -3$ ✓
 $y = 0x - 3$

② $y = 2x - 2$

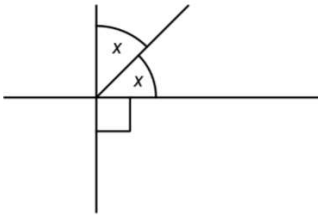
[17]

QUESTION 3 – GEOMETRY OF STRAIGHT LINES

3.1 Solve for x giving a reason



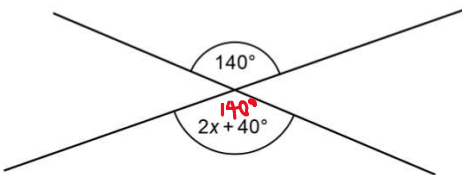
(2)



$$\begin{aligned}
 x + x + 90^\circ &= 180^\circ \\
 (\text{Ls on straight line}) \\
 2x + 90^\circ &= 180^\circ \\
 2x &= 90^\circ \\
 x &= 45^\circ
 \end{aligned}$$

3.2. Solve for x giving reasons

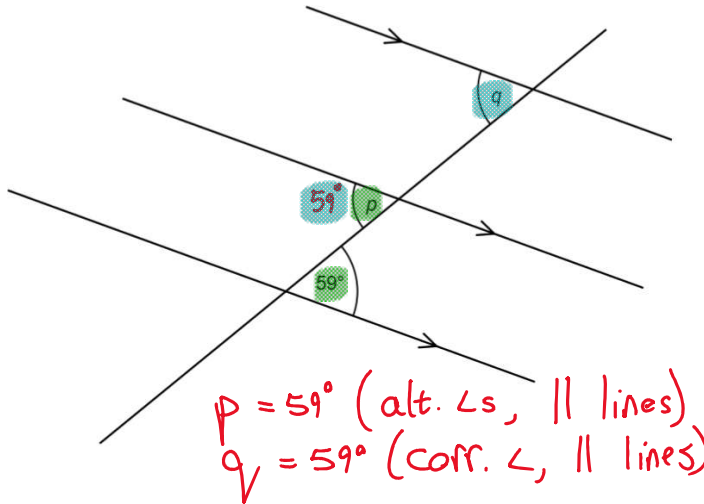
(3)



$$\begin{aligned}
 2x + 40^\circ &= 140^\circ \checkmark \\
 (\text{vert. opp. Ls}) &\checkmark \\
 2x &= 100^\circ \\
 x &= 50^\circ \checkmark
 \end{aligned}$$

3.3 Determine p and q giving reasons:

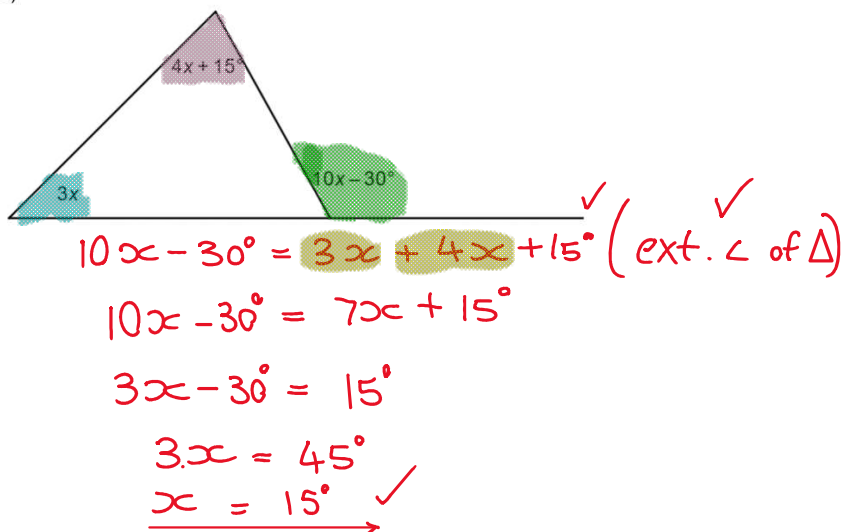
(3)



3.4 Solve for x giving reasons:

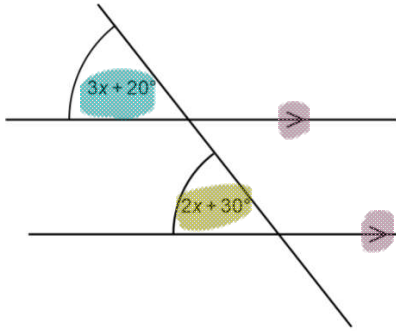
(3)

a)



b)

(2)



$$3x + 20^\circ = 2x + 30^\circ \checkmark$$

(corr. $\angle$ s $\parallel$ lines) $\checkmark$

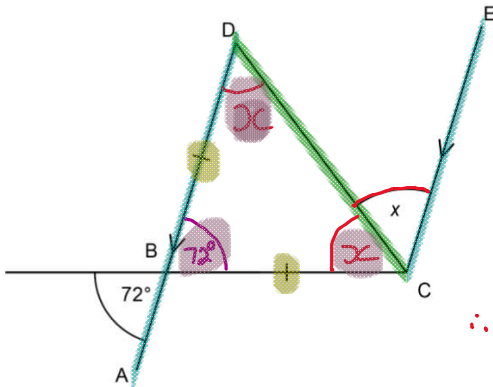
$$x + 20^\circ = 30^\circ$$

$$\underline{x = 10^\circ}$$

3:20

3.5 Solve for x giving reasons:

(5)

 $BD = BC$ 

$$\hat{D}BC = 72^\circ \text{ (vert. opp. } \angle\text{s)}$$

$$\hat{D} = x \text{ (alt. } \angle\text{s AD} \parallel \text{CE)}$$

$$BD = BC \text{ (given)}$$

$$\therefore \hat{DCB} = \hat{D} = x$$

$$\text{(} \angle\text{s opp.} = \text{Sides)}$$

$$\therefore x + x + 72^\circ = 180^\circ \text{ (} \angle\text{s of } \Delta)$$

$$2x + 72^\circ = 180^\circ$$

$$2x = 108^\circ$$

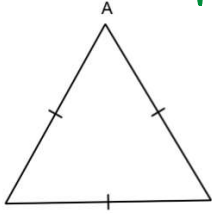
$$\underline{x = 54^\circ}$$

[18]

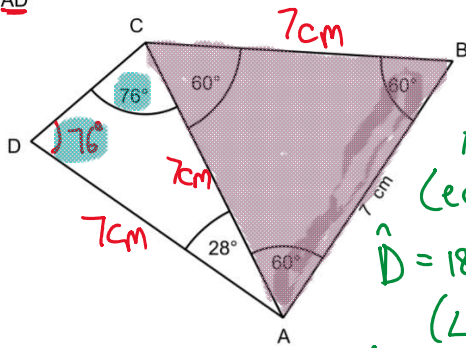
QUESTION 4 – GEOMETRY OF 2D SHAPES

4.1 Give reasons and find

- a) $\hat{A} = 60^\circ$ (equilateral Δ) (1)



- b) AD (3)

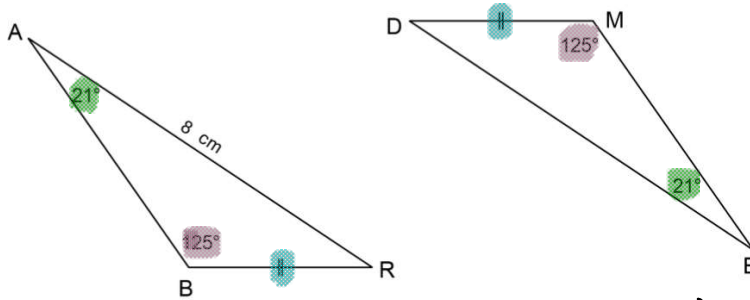


$$\begin{aligned}
 AC &= 7\text{ cm} \\
 (\text{equilateral } \Delta ABC) \\
 \hat{D} &= 180^\circ - 28^\circ - 76^\circ = 76^\circ \\
 (\text{Ls of } \Delta ACD) \\
 \therefore \hat{D} &= \hat{C} \\
 \therefore AD &= AC \text{ (sides opp. } = \text{ Ls)}
 \end{aligned}$$

① SSS ② SAS ③ AAS ④ RHS

4.2 Determine DE giving all reasons.

(4)



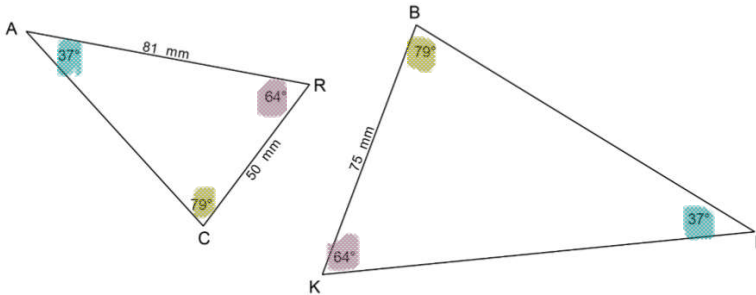
$$\triangle ABR \equiv \triangle EMD \text{ (AAS)}$$

$$RA = DE \text{ (}\equiv \Delta s\text{)}$$

$$\underline{DE = 8\text{ cm}}$$

4.3 Determine the length of LK to one decimal place giving all reasons.

(5)



$$\triangle CAR \parallel \triangle BLK \text{ (AAA)}$$

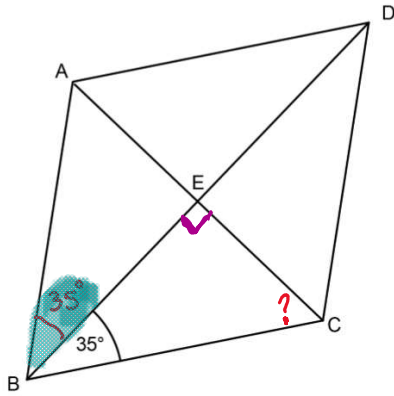
$$\frac{LK}{KB} = \frac{AR}{RC} \text{ (}\parallel \Delta s\text{)}$$

$$\frac{LK}{75} = \frac{81}{50}$$

$$LK = \frac{81}{50} \times 75$$

$$= \underline{121,5\text{ mm}}$$

4.4 ABCD is a rhombus



a) Find, with reasons $\hat{E}CB$

$$\hat{B}EC = 90^\circ \text{ (Diags. of rhombus)} \quad (3)$$

$$\therefore 35^\circ + 90^\circ + \hat{E}CB = 180^\circ \text{ (Ls of } \triangle BEC)$$

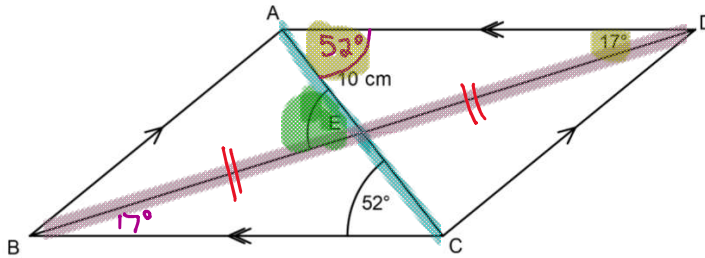
$$125^\circ + \hat{E}CB = 180^\circ$$

$$\hat{E}CB = 55^\circ$$

b) Find, with a reason $\hat{A}BE$

$$\hat{A}BE = 35^\circ \text{ (diags. of rhombus bisect } \angle\text{s)} \quad (2)$$

4.5 Consider the diagram below. ABCD is a parallelogram. ED is 10 cm.



a) Give the length of EC with a reason.

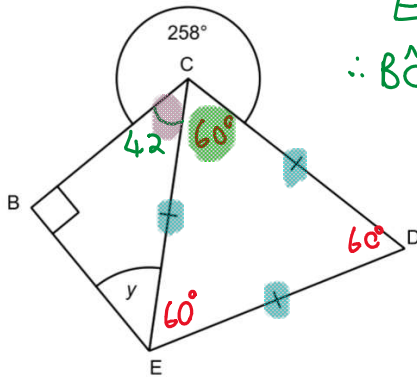
(1)

$EC = 10 \text{ cm}$ (diags of parm. bisect one another)

b) Give the size of $\angle AEB$ giving all reasons.

$\angle ADE = 17^\circ$ (alt. $\angle$ s $AD \parallel BC$)
 $\angle AEB = 52^\circ + 17^\circ = 69^\circ$ (ext. $\angle$ $\triangle AED$)

4.6 Determine the size of y giving reasons.



$\angle ECD = 60^\circ$ (equilateral $\triangle$)
 $\therefore \angle BCE + 258^\circ + 60^\circ = 360^\circ$
 (Ls round pt.)

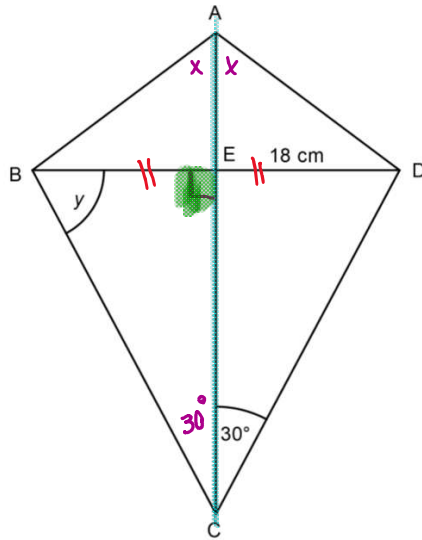
$\angle BCE = 42^\circ$

$y + 90^\circ + 42^\circ = 180^\circ$ (Ls of $\triangle BEC$)

$y + 132^\circ = 180^\circ$

$y = 48^\circ$

4.7 ABCD is a kite. ~~BE is 9 cm.~~



- a) Give BE with a reason.

(1)

$$BE = 18 \text{ cm (diags of kite)}$$

- b) Determine the size of y giving all reasons.

(3)

$$\angle EBC = 30^\circ \text{ (diag. of kite bisects } \angle \text{ s)}$$

$$\angle BEC = 90^\circ \text{ (diags of kite } \perp \text{ to one another)}$$

$$y + 30^\circ + 90^\circ = 180^\circ \text{ (}\angle \text{ s of } \triangle BEC)$$

$$y + 120^\circ = 180^\circ$$

$$\underline{y = 60^\circ}$$

[30]

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