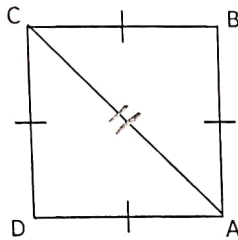
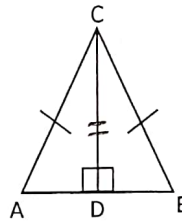


Directions: For each pair of triangles, tell which postulates (SSS, SAS, ASA, AAS, HL) make the triangles congruent. If the triangles are not congruent, write not congruent or none.

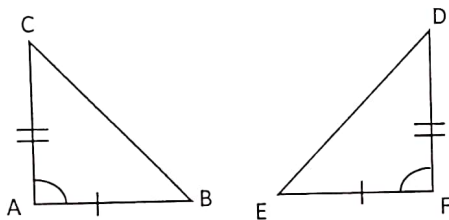
1. $\triangle ABC \cong \triangle CDA$ by SSS



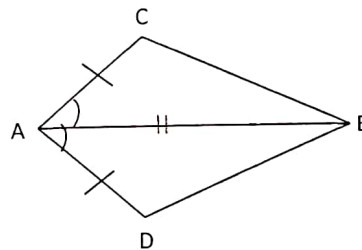
2. $\triangle ADC \cong \triangle BDC$ by HL



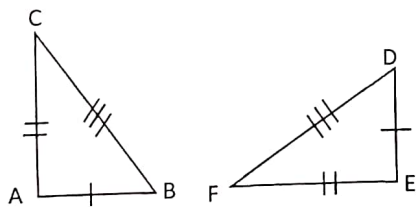
3. $\triangle ABC \cong \triangle FED$ by SAS



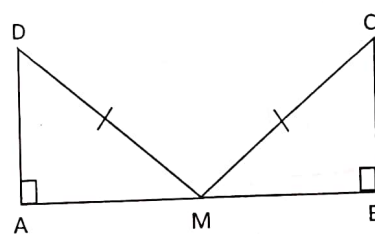
4. $\triangle ACB \cong \triangle ADB$ by SAS



5. $\triangle ABC \cong \triangle EDF$ by SSS

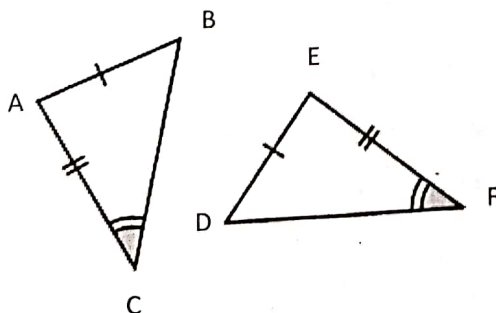


6. $\triangle AMD \cong \triangle$ Not Congruent by Cannot assume any side or angle



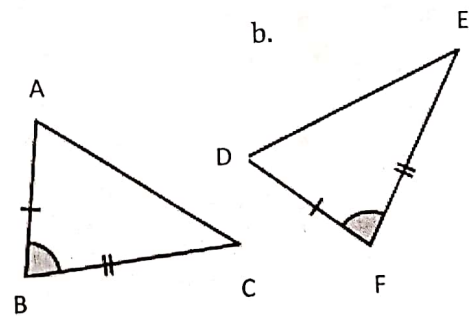
7. If the figures in the diagram below are congruent then show and explain the sequence of transformations that would be used to get one of the shapes onto the other one. If they are not congruent then explain why.

a.



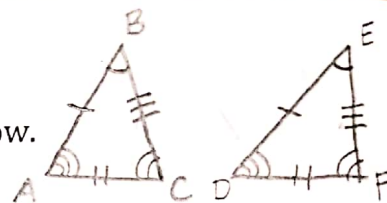
Rotate and Reflect

b.



Rotate

8. Given that $\triangle ABC \cong \triangle DEF$, fill in the congruence statements below.



$$\overline{AB} \cong \underline{\overline{DE}}$$

$$\overline{EF} \cong \underline{\overline{BC}}$$

$$\angle C \cong \underline{\angle F}$$

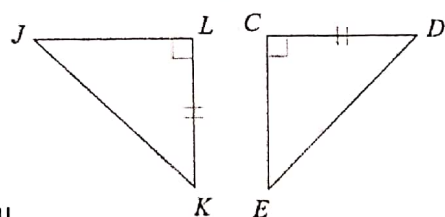
$$\overline{DF} \cong \underline{\overline{AC}}$$

$$\angle E \cong \underline{\angle B}$$

$$\angle A \cong \underline{\angle D}$$

9. State the additional information needed to make the triangles congruent for the given reason. Then state the congruent triangles.

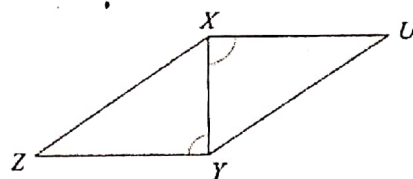
a.



HL

Need to know $\underline{\overline{JK} \cong \overline{DE}}$
 $\triangle LKJ \cong \triangle CED$

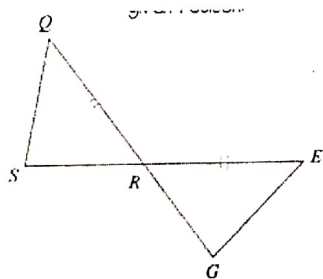
b.



ASA

Need to know $\underline{\angle ZXY \cong \angle UYX}$
 $\triangle YXZ \cong \triangle XYU$

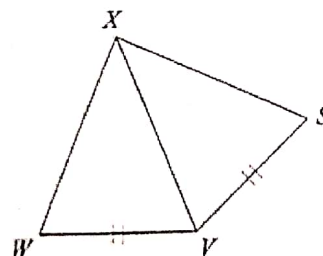
c.



SAS

$\triangle QRS \cong \triangle ERG$
 Need to know $\underline{\angle QRS \cong \angle ERG}$
 $\underline{\overline{SR} \cong \overline{GR}}$

d.



SSS

$\triangle XVW \cong \triangle XVS$
 Need to know $\underline{\overline{XW} \cong \overline{VS}}$

10. Given the sequence below, write a recursive equation that represents the sequence

a. 7, -21, 63, -189, ...

$\begin{matrix} \vee & \vee & \vee \\ -3 & -3 & -3 \end{matrix}$

Recursive

$$f(n) = f(n-1) \cdot -3$$

$$f(1) = 7$$

b. 21, 19.5, 18, 16.5, 15, ...

$\begin{matrix} \vee & \vee & \vee & \vee \\ -1.5 & -1.5 & -1.5 & -1.5 \end{matrix}$

Recursive

$$f(n) = f(n-1) - 1.5$$

$$f(1) = 21$$

11. Given the figure below, write a recursive and explicit equation that represents the figure.

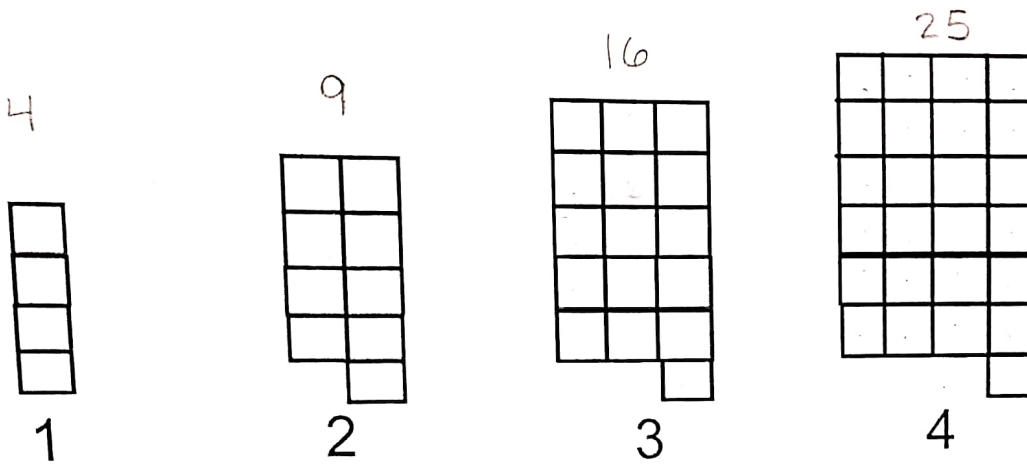


figure # (x)	block # f(x)
1	4
2	9
3	16
4	25

$> +5$
 $> +7$
 $> +9$

Recursive: $f(x) = f(x-1) + 2x + 1$
 $f(1) = 4$

$f(n) = f(n-1) + mx + b$
 $f(n) = f(n-1) + 2x + b$
 $f(2) = 4 + 2(2) + b$
 $4 + 4 + b = 9$
 $8 + b = 9$
 $b = 1$

12. Given the figure below, write a recursive and explicit equation that represents the figure.

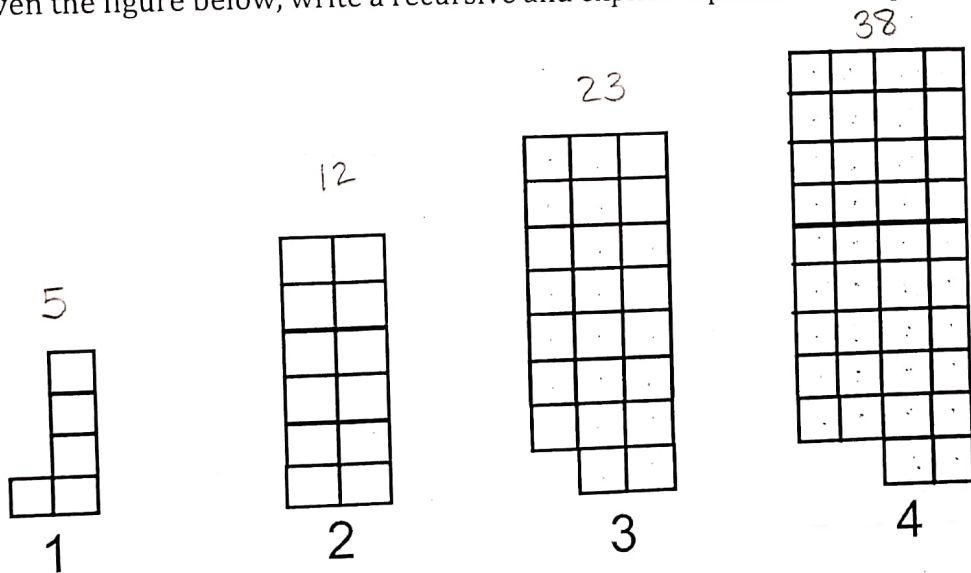


figure # (x)	block # f(x)
1	5
2	12
3	23
4	38

$> +7$
 $> +4$
 $> +11$
 $> +15$

Recursive: $f(x) = f(x-1) + 4x - 1$
 $f(1) = 5$

$f(n) = f(n-1) + mx + b$
 $f(n) = f(n-1) + 4x + b$
 $f(2) = 5 + 4(2) + b$
 $5 + 8 + b = 12$
 $13 + b = 12$
 $b = -1$

13. Answer the following questions for the table below.

X	Y
0	7
1	12
2	27
3	52
4	87

+5 > +10
 +15 > +10
 +25 > +10
 +35

$$f(x) = f(x-1) + mx + b$$

$$f(x) = f(x-1) + 10x + b$$

$$f(3) = 27 + 10(3) + b$$

$$27 + 30 + b = 52$$

$$\begin{array}{r} \cancel{57} + b = 52 \\ -57 \qquad \qquad -57 \\ \hline b = -5 \end{array}$$

a) Type of function: Quadratic

c) Recursive Equation: $f(x) = f(x-1) + 10x - 5$
 $f(1) = 12$

14. Answer the following questions for the table below.

X	Y
0	-1
1	8
2	23
3	44
4	71

+9 > +6
 +15 > +6
 +21 > +6
 +27

$$f(x) = f(x-1) + mx + b$$

$$f(x) = f(x-1) + 6x + b$$

$$f(4) = 44 + 6(4) + b$$

$$44 + 24 + b = 71$$

$$\begin{array}{r} \cancel{68} + b = 71 \\ -68 \qquad \qquad -68 \\ \hline b = 3 \end{array}$$

a) Type of function: Quadratic

c) Recursive Equation: $f(x) = f(x-1) + 6x + 3$

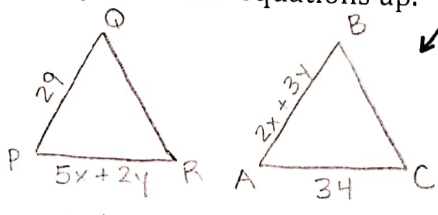
15. If $\triangle PQR \cong \triangle ABC$, find the values of x and y .

Used Elimination

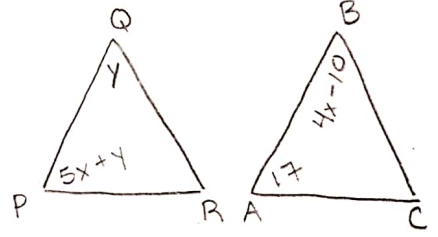
Draw a picture to help you set the equations up.

- a. $AB = 2x + 3y$
 $PQ = 29$
 $PR = 5x + 2y$
 $AC = 34$

$x = 4$
 $y = 7$



- b. $\angle Q = y$
 $\angle B = 4x - 10$
 $\angle P = 5x + y$
 $\angle A = 17$



$5(4) + 2y = 34$
 $20 + 2y = 34$
 $2y = 14$
 $y = 7$

$y = 4x - 10$
 $5x + y = 17$
 $5x + (4x - 10) = 17$
 $9x - 10 = 17$
 $9x = 27$
 $x = 3$

Used Substitution

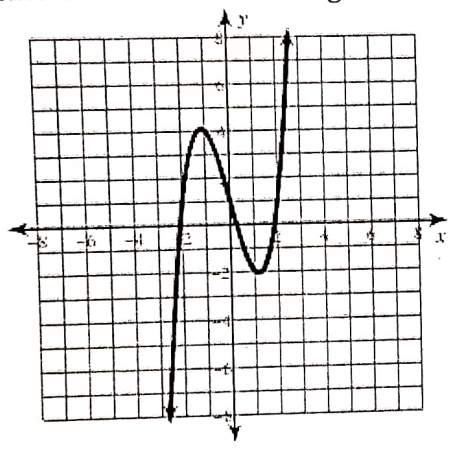
16. Simplify.

	$2x^2$	$5x$
$+10$	$20x$	50

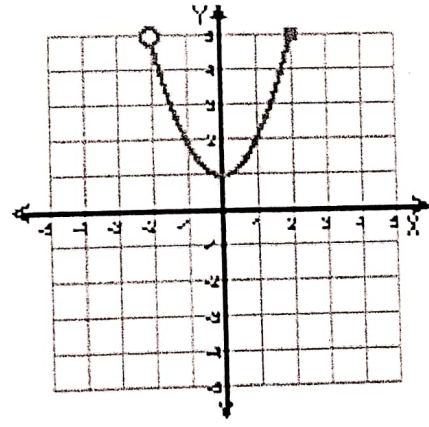
$2x^2 + 5x + 20x + 50$
 $2x^2 + 25x + 50$

$3(5x + 2y = 34)$
 $2(2x + 3y = 29)$
 $15x + 6y = 102$
 $-4x + 6y = 58$
 $11x = 44$
 $x = 4$

17. State the domain and range for each graph.



Domain: $(-\infty, \infty)$
 Range: $(-\infty, \infty)$



Domain: $(-2, 2]$
 Range: $[1, \infty)$