

1. (a)	$x - 1 = 0$	\Rightarrow	$x - 1 + 1 = 0 + 1$	[Adding 1 both sides]
	$\Rightarrow x = 1$			
(b)	$x + 1 = 0$	\Rightarrow	$x + 1 - 1 = 0 - 1$	[Subtracting 1 both sides]
	$\Rightarrow x = -1$			
(c)	$x - 1 = 5$	\Rightarrow	$x - 1 + 1 = 5 + 1$	[Adding 1 both sides]
	$\Rightarrow x = 6$			
(d)	$x + 6 = 2$	\Rightarrow	$x + 6 - 6 = 2 - 6$	[Subtracting 6 both sides]
	$\Rightarrow x = -4$			
(e)	$y - 4 = -7$	\Rightarrow	$y - 4 + 4 = -7 + 4$	[Adding 4 both sides]
	$\Rightarrow y = -3$			
(f)	$y - 4 = 4$	\Rightarrow	$y - 4 + 4 = 4 + 4$	[Adding 4 both sides]
	$\Rightarrow y = 8$			
(g)	$y + 4 = 4$	\Rightarrow	$y + 4 - 4 = 4 - 4$	[Subtracting 4 both sides]
	$\Rightarrow y = 0$			
(h)	$y + 4 = -4$	\Rightarrow	$y + 4 - 4 = -4 - 4$	[Subtracting 4 both sides]
	$\Rightarrow y = -8$			

2. (a)	$M = 42$	\Rightarrow	$\frac{M}{3} = \frac{42}{3}$	[Dividing both sides by 3]
	$\Rightarrow M = 14$			
(b)	$\frac{b}{2} = 6$	\Rightarrow	$\frac{b}{2} \times 2 = 6 \times 2$	[Multiplying both sides by 2]
	$\Rightarrow b = 12$			
(c)	$\frac{p}{7} = 4$	\Rightarrow	$\frac{p}{7} \times 7 = 4 \times 7$	[Multiplying both sides by 7]
	$\Rightarrow p = 28$			
(d)	$4x = 25$	\Rightarrow	$\frac{4x}{4} = \frac{25}{4}$	[Dividing both sides by 4]
	$\Rightarrow x = \frac{25}{4}$			
(e)	$8y = 36$	\Rightarrow	$\frac{8y}{8} = \frac{36}{8}$	[Dividing both sides by 8]
	$\Rightarrow y = \frac{9}{2}$			

1)	add 2 to a	=	$a+2$		
2)	subtract 1 from b	=	$b-1$		
3)	double c	=	$2c$	or	$c \times 2$
4)	add 1 to d	=	$d+1$		
5)	subtract 3 from e	=	$e-3$		
6)	half of f	=	$\frac{1}{2}f$	or	$f/2$
7)	multiply g by 4	=	$4g$	or	$g \times 4$
8)	multiply h by 3	=	$3h$	or	$h \times 3$
9)	divide i by 3	=	$i/3$	or	$i \div 3$
10)	add 4 to j	=	$j+4$		
11)	double k and add 1	=	$2k+1$		
12)	double l and subtract 2	=	$2l-2$		
13)	halve m and add 3	=	$\frac{1}{2}m+3$	or	$m/2 + 3$
14)	halve n and subtract 1	=	$\frac{1}{2}n-1$	or	$n/2-1$
15)	multiply o by 3 and add 4	=	$3o+4$		
16)	multiply p by 5 and subtract 2	=	$5p-2$		
17)	add 7 to r	=	$r+7$		
18)	add s to 7	=	$s+7$	or	$7+s$
19)	subtract 10 from t	=	$t-10$		
20)	subtract u from 10	=	$10-u$		
21)	multiply 2 by v	=	$2v$		
22)	multiply w by 2	=	$2w$		
23)	divide x by 5	=	$\frac{1}{5}x$	or	$x/5$
24)	divide 5 by y	=	$\frac{5}{y}$	or	$5 \div y$

1)	There are 12 packets of crisps in a big pack. I buy n big packs of crisps. How many packets of crisps have I bought?	= $12n$
2)	There are t pencils in a pack. I buy 4 packs. How many pencils?	= $4t$
3)	I have 6 pens. A friend gives me n more pens. How many pens do I have now?	= $n+6$
4)	A bag of apples contains 6 apples. I buy w bags of apples. How many apples have I bought?	= $6w$
5)	I have a box of d chocolates. I eat 7 of them. How many chocolates are left?	= $d-7$
6)	The temperature is 62°F . It gets warmer by h degrees. What is the temperature now?	= $62+h^{\circ}\text{F}$ (or $h+62$)
7)	There are 20 balloons at a party. y balloons are burst. How many balloons are left?	= $20-y$
8)	There are z fish in an aquarium. $\frac{1}{5}$ of the fish are angelfish. How many fish are angelfish?	= $\frac{1}{5}z$
9)	There are 20 red and blue marbles in a bag. s marbles are red. How many are blue?	= $20-s$
10)	In a class of c children, $\frac{2}{5}$ are boys. What fraction are girls?	= $\frac{3}{5}$ (trick problem)
11)	There are s cars in a carpark. How many wheels will they have in total?	= $4s$
12)	I have u soft toy salamanders. I get v more. How many salamaners do I have now?	= $u+v$

1. Since, a triangle is possible whose sum of the lengths of any two sides would be greater than the length of third side.

(i) 2 cm, 3 cm, 5 cm

$$2 + 3 > 5 \quad \text{No}$$

$$2 + 5 > 3 \quad \text{Yes}$$

$$3 + 5 > 2 \quad \text{Yes}$$

This triangle is not possible.

(ii) 6 cm, 3 cm, 2 cm

$$6 + 3 > 2 \quad \text{Yes}$$

$$6 + 2 > 3 \quad \text{Yes}$$

$$2 + 3 > 6 \quad \text{No}$$

This triangle is not possible.

(iii) 3 cm, 6 cm, 7 cm

$$3 + 6 > 7 \quad \text{Yes}$$

$$6 + 7 > 3 \quad \text{Yes}$$

$$3 + 7 > 6 \quad \text{Yes}$$

This triangle is possible.

2. Join OR, OQ and OP.

(i) Is $OP + OQ > PQ$?

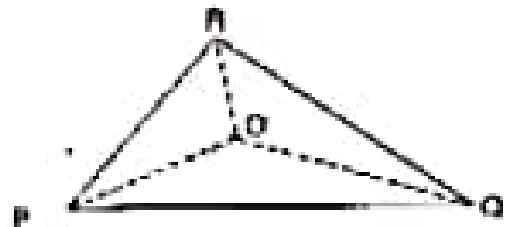
Yes, POQ form a triangle.

(ii) Is $OQ + OR > QR$?

Yes, RQO form a triangle.

(iii) Is $OR + OP > RP$?

Yes, ROP form a triangle.



3. Since, the sum of lengths of any two sides in a triangle should be greater than the length of third side.

Therefore, In $\triangle ABM$, $AB + BM > AM$ (i)

In $\triangle AMC$, $AC + MC > AM$ (ii)

Adding eq. (i) and (ii),

$$AB + BM + AC + MC > AM + AM$$

$$\Rightarrow AB + AC + (BM + MC) > 2AM$$

$$\Rightarrow AB + AC + BC > 2AM$$

Hence, it is true.

4. Since, the sum of lengths of any two sides in a triangle should be greater than the length of third side.

Therefore, In $\triangle ABC$, $AB + BC > AC$ (i)

In $\triangle ADC$, $AD + DC > AC$ (ii)

In $\triangle DCB$, $DC + CB > DB$ (iii)

In $\triangle ADB$, $AD + AB > DB$ (iv)