Linear Equations

$$x + 2 = 6$$

$$x = 4$$

$$Ex2$$
 $y-3=5$

$$\frac{2x}{2} = \frac{10}{2}$$

$$x = \frac{10}{2}$$

$$x = 5$$

$$\frac{\infty}{4} = 8$$

$$x = 8x4$$

$$x = 32$$

$$2x + 3 = 11$$

$$2x = 8$$

$$x = 4$$

$$5x - 3 = 17$$

$$5x = 17 + 3$$

$$x = \frac{z_0}{c}$$

2)
$$x - 3 = 4$$

$$3) \quad 3x = 12$$

$$(5) \times +1 = 8$$

6)
$$x-5=7$$

$$7)$$
 $7x = 21$

$$9) \times +4 = 1$$

$$|0\rangle = -5 = -4$$

$$|| 2 = || 5|$$

$$\frac{\chi}{10} = 4$$

13)
$$2x + 5 = 19$$

$$3x - 2 = 16$$

15)
$$4x + 3 = 23$$

$$5x - 7 = 43$$

$$6x + 2 = 20$$

$$7x - 5 = 23$$

19)
$$2x - 7 = 8$$

$$20)$$
 $3x + 5 = 19$

	LINEAR EQUAT	TONS 1 EXERCISE
)	x+9=11	7) 72 = 21
	x = 11-9	$x = \frac{21}{7}$
	x = 2	x = 3
2)	z-3=4	8) × = 5
	x = 4 + 3	8) = 5
	x = 7	x = 5x3
3)	3x = 12	x = 15
	$x = \frac{12}{3}$	9) 2+4=1
	x = 4	x = 1-4
		x = −3
4)	≥ = 5	16) x-5=-4
_	x = 5x2	x = -4+5
	× = 10	x = 1
5)	x+1=8	11) 2x = 15
	x = 8 - 1	$x = \frac{15}{2}$
	2 = 7	x= 7½
6)	2-5 = 7	12) = 4
	x = 7+5	$x = 4 \times 10$
	$\alpha = 12$	x = 40

3 of 4		3
	LINEAR EQUATIONS I EXERUSE	
13)	2x + 5 = 19	16) 5x - 7 = 43
	2x = 19 - 5	5x = 43 + 7
	2x = 14	Sx = 50
	$x = \frac{14}{2}$	x = 50
	x = 7	١٥ = يد
14)	3x - 2 = 16	17) 6x +2 = 20
	3x = 16 + 2	6x = 20 - 2
	$3\alpha = 18$	6x = 18
	$x = \frac{18}{3}$	$x = \frac{18}{6}$
	x = 6	x = 3
(5)	4x + 3 = 23	79c - 5 = 23
	4z = 23 - 3	7x = 23+5
	47 = 20	72 = 28
	$x = \frac{20}{4}$	$x = \frac{28}{7}$
	x = 5	x = 4

EXERCISE

$$7x-7=8$$

$$2\alpha = 8+7$$

$$2z = 15$$

$$x = \frac{15}{2}$$

$$3x + 5 = 19$$

$$3x = 19 - 5$$

$$3x = 14$$

$$x = \frac{14}{3}$$

Equs with an a term on both sides

Ex7

$$7x + 8 = 3x + 56$$

$$7x - 3x = +56 - 8$$

$$4x = 48$$

$$x = \frac{48}{4}$$

Ex8

$$5x + 32 = 14 - 5x$$

$$x = -\frac{18}{18}$$

$$x = -1.8$$

Equations Involving Brackets

Ex9

$$3(2x+i)=33$$

 $6x+3=33$
 $6x=33-3$
 $6x=30$
 $x=30$
 $x=5$

$$3(2x+1) = 33$$

$$2x+1 = \frac{33}{3}$$

$$2x+1 = 11$$

$$2x = 11-1$$

$$2x = 10$$

$$x = \frac{10}{2}$$

$$x = 5$$

Ex (0

$$2(5x+3) = 3(x+1)+17$$

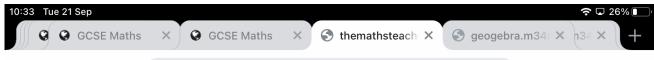
$$10x+6 = 3x+3+17$$

$$10x-3x = +3+17-6$$

$$7x = 14$$

$$x = \frac{4}{7}$$

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LINEAR EQUATIONS (2)

EXERCISE

Solve the following equations:

1.
$$3x - 7 = 23$$

$$2. \quad 5x + 3 = 25$$

3.
$$8x - 2 = 4x + 10$$

4.
$$3x + 7 = 27 - 2$$

$$5. \quad 9x - 3 = 7x + 8$$

6.
$$2x - 5 = 16 - 5x$$

7.
$$2(x+3) = 18$$

8.
$$4(x-5) = 8$$

$$10. \qquad 5\left(2x-3\right) = 25$$

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LINEAR	EQUATIONS	(Z)
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EXERCISE

2

1.
$$3x - 7 = 23$$

$$3x = 23 + 7$$

$$3x = 30$$

$$x = \frac{30}{3}$$

$$x = 10$$

2.
$$5x + 3 = 25$$

$$5x = 25 - 3$$

$$5x = 22$$

$$x = \frac{27}{5}$$

$$8x - 4x = +10 + 2$$

$$4x = 12$$

$$x = \frac{12}{4}$$

4.
$$3x+7 = 27 - x$$

$$3x + x = 27 - 7$$

$$4x = 20$$

$$x = \frac{20}{4}$$

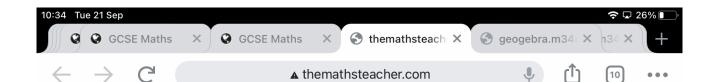
$$x = 5$$

$$5. \quad 9x - 3 = 7x + 8$$

$$9x - 7x = 8 + 3$$

$$7x = 21$$

$$x = 3$$



LINEAR EQUATIONS (2)

EXERCISE

$$2x + 6 = 18$$
 $6x + 21 = 30$
 $2x = 18 - 6$
 $6x = 30 - 21$
 $2x = 12$
 $6x = 9$
 $x = \frac{12}{2}$
 $x = \frac{9}{6}$
 $x = 6$
 $x = \frac{13}{6}$ or $x = \frac{11}{2}$

$$4(x-5) = 8$$

$$4x - 20 = 8$$

$$4x = 8 + 20$$

$$4x = 28$$

$$x = \frac{28}{4}$$

$$x = 7$$

10.
$$5(2x-3) = 25$$

 $10x - 15 = 25$
 $10x = 25 + 15$
 $10x = 40$
 $x = 40$
 $x = 40$

Word Problems Involving Linear Equations

Alan is twice as old as Bill Colin is 5 years older than Alan Colin is 17. How old is Bill?

Let Bill be x years old

Alan = 2x

Colin = 2x+5

2x + 5 = 17 2x = 17 - 5 2x = 12 $x = \frac{12}{2}$ x = 6

Bill is 6 years old

Erz John's dad is 3 times as old as John In 12 years time dad will be twice as old as John, How old is John now?

Let John be or now
Dad now 3x

In 12 years time John x+12 Dad 3x+12

3x+12 = 2(x+12)

$$3x + 17 = 2x + 24$$

 $3x - 2x = 24 - 12$
 $x = 12$
John is now 12 years old

13. The sum of three consecutive odd integers is 189. What are the integers?

Let lovest be
$$x$$

the others are $x+2$, $x+4$
 $x + x + 2 + x + 4 = 189$
 $3x+6 = 189$
 $3x = 183$
 $x = 183$
 $x = 61$

Numbers are 61, 63, 65