Q5 yaxis $\Rightarrow$ $x=0$

$f(x) = x^3 + 3x^2 - 9x + 5$

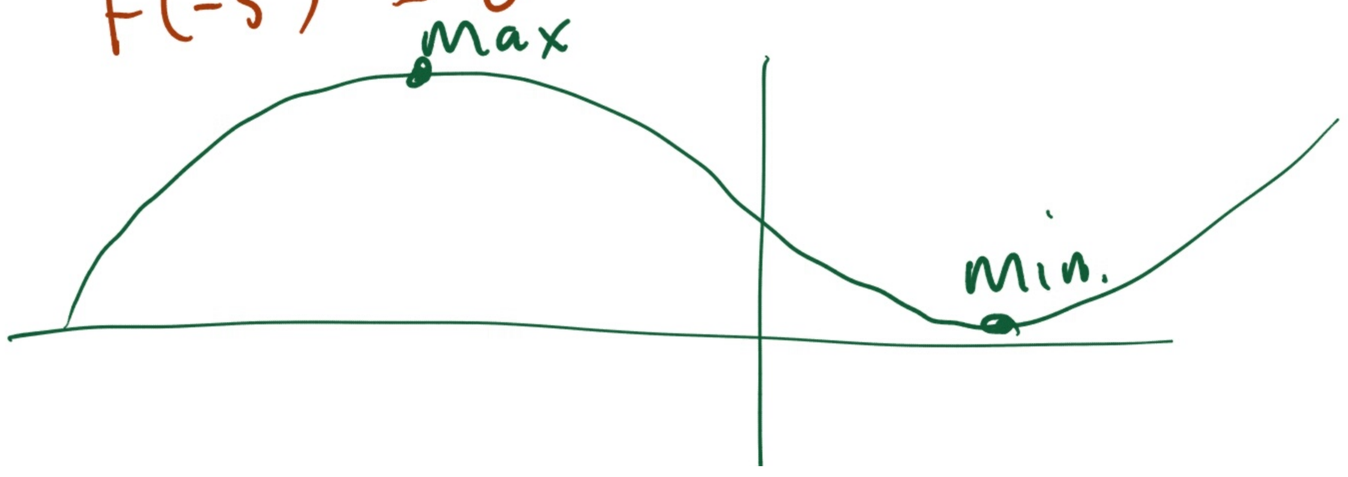
$f(\overset{x}{0}) = \overset{y}{5}$ $\quad$ $0 \quad 0 \quad 0 + 5$

$(0, 5)$

ii $x=-5$ sub in for x

$f(-5) = (-5)^3 + 3(-5)^2 - 9(-5) + 5$

$f(-5) = 0$



x	f(x)	
-5	0	
-4	25	
-3	32	max
-2	27	
-1	16	
0	5	
1	0	min
2	7	
3	32	

Algebra 1

Rules for integers (Z)

① ADD/SUBTRACT

(+) and (+) = (+)
(−) and (−) = (−)
} Add + keep the same sign.

(+) and (−)
(−) and (+)
} subtract and keep the sign of the bigger number

② Multiplication

(+) × (+) = (+)
(−) × (−) = (+)
(+) × (−) = (−)
(−) × (+) = (+)

③ Division

$\frac{(+)}{(+)} = (+)$ $\quad \frac{(-)}{(+)} = (-)$

$\frac{(-)}{(-)} = (+)$ $\quad \frac{(+)}{(-)} = (-)$

Order of operations

B - Brackets - multiply

I - indices } $a^{1/2}$, $a^{1/3}$

R - roots } $\sqrt{a}$, $\sqrt[3]{\ }$

D - Division }

M - multiplication }

A - addition }

S - subtraction }

Exercise 1.1

Pg 2

Q1-39

Evaluating Expressions

Sub in the given value in the given expression.

Eg 1) Evaluate $3x-7$ when $x=4$

$3(4)-7$

$12-7=5$

use brackets for subsitution

C/W pg 5/6 Q1 $\Rightarrow$ 15

Eg 2) $2x^2-8$ when $x=6$

$2(6)^2-8$

$72-8$

$=64$

Solving linear equation

Solve to find the variable.

Eg 1 $6x - 2 = 4x + 10$

Bring x parts together

Bring the constants together

$-4x$	$2x - 2 = +10$	$-4x$
$+2$	$2x = 12$	$+2$
$\div 2$	$x = 6$	$\div 2$

C/W Pg 7 Q1 → 27.

Solving equations with fractions

Numerator / Denominator

Eg 1) $\frac{x}{4} = 3$ (multiply 4 → 12, 4)

LCD = 4

$X = 12$

1. Find the LCD
2. Multiply across the equation with the LCD "write it down"
3. Simplify
4. Multiply whats left.
5. Solve for X.

Pg 9

Q4) $\frac{5^{1}(x-1)}{5_{1}} = 4^{(x)}5$ multiply

LCD = 5

$1x-1 = 20$

$+1 \mid x = 21 \mid +1$

Q10) $\frac{2^{1}(x+1)}{2_{1}} = \frac{2}{1}(x-2)$ multiply

LCD = 2

$1x+1 = 2x-4$

$-1x \mid +1 = 1x-4 \mid -1x$

$+4 \mid 5 = x \mid +4$

Q13) $\frac{2x-5}{3} = \frac{x-2}{2}$ LCD = 6

$2(2x-5) = 3(x-2)$ multiply whats left.

$4x - 10 = 3x - 6$

$-3x$	$1x - 10 = -6$	$-3x$
$+10$	$x = +4.$	$+10$

Q19) $\frac{2x-1}{5} = \frac{x}{3} + \frac{1}{3}$

LCD = 15

$3(2x-1) = 5(x) + 3(1)$ Multiply what's left.

$6x - 3 = 5x + 3$

$-5x \quad -5x$

$+3 \quad +3$

$x - 3 = +3$

$x = 6.$

C/W

Pg 9 Q2.

Pg 9 Q14

$$\frac{\cancel{10}\,2\,(2x+1)}{\cancel{5}_{1}} = \frac{\cancel{10}\,5\,(x-1)}{\cancel{2}_{1}}$$

LCD = 10

$$2(2x+1) = 5(x-1)$$

$$4x+2 = 5x-5$$

$$-4x \quad 2 = x-5 \quad -4x$$

$$+5 \quad 7 = x \quad +5$$

Pg 9 Q17

$$\frac{2x}{3} - \frac{x}{4} = \frac{5}{2}$$

LCD = 12

$$4(2x) - 3(x) = 6(5)$$

$$8x - 3x = 30$$

$$5x = 30$$

$$x = 6$$

Pg 9 Q26

$$\frac{\cancel{12}^{6}(x+1)}{\cancel{2}_{1}} - \frac{\cancel{12}^{1}(5)}{\cancel{12}_{1}} = \frac{\cancel{12}^{4}(4x-1)}{\cancel{3}_{1}}$$

$$6(x+1) - 1(5) = 4(4x-1)$$

$$6x+6-5 = 16x-4$$

$$6x+1 = 16x-4$$

$-6x$ | $+1 = 10x-4$ | $-6x$

$+4$ | $5 = 10x$ | $+4$

$5/10 = x$

C/W Pg 9 Q22

Q23, 24,

2CD = 12

$$x = \frac{5}{10}$$

$$x = \frac{1}{2}$$

(22) $\frac{x}{5} - \frac{x-3}{6} = \frac{3}{2}$

LCD = 30

$\frac{30x}{5} - \frac{30(x-3)}{6} = \frac{30(3)}{2}$

$6(x) - 5(x-3) = 15(3)$

$6x - 5x + 15 = 45$

$x = 30$

23

$$\frac{3x-2}{5} - \frac{x-1}{2} = \frac{3}{10}$$

LCD = 10

$$2(3x-2) - 5(x-1) = 1(3)$$

$$6x - 4 - 5x + 5 = 3$$

$$x + 1 = 3$$

$$x = 2$$

24

$$\frac{2x-3}{4} + \frac{1}{2} = \frac{3x-2}{5}$$

$20 \quad 5 \quad 20 \quad 10 \quad 20 \quad 4$

$4 \quad 1 \quad 2 \quad 1 \quad 5 \quad 1$

$2CD = 20$

$$10x - 15 + 10 = 12x - 8$$

$$10x - 5 = 12x - 8$$

$$3 = 2x$$

$$3/2 = x$$