THE TEZ EXAMINATION BOARD TOPICAL WORK ON ALGEBRA
TOPICAL EVALUATION TEST ONE

1. Form the following algebraic expressions

1.	4 less than a	5.	3 subtracted from a number	9.	A number divided by 3
2.	X less than 12	6.	2 divided by a number	10.	Subtract 2 from y
3.	A number added to 10	7.	John is 5years older than Mary	11.	a minus b equal to c
4.	Three more than x equals to 7	8.	Double x	12.	Product of a and b

2. What is the meaning of the following algebraic expressions?

1.	a + b	5.	$\frac{ab}{c}$	9.	a(b – c)
2.	m – n	6.	ab + ac	10.	$2y^3m^2$
3.	Ab	7.	ax – by	11.	$4p^2$
4.	2p	8.	$(4p^2)$	12.	$\frac{a}{b}$

SUBSTITUTION

Substitution means to replace letters with given numbers. This is done after given expression has been expanded.

1.	Given that a = 5, b = 4 and c = 0, find the value of a+b+c	6.	Find he value of $\frac{5a-m\,(m-a)}{a}$ when a = 3 and m = 6

2.	Given that x = 2, y = --2 and z = 3, Evaluate 4x + 5z	7.	Given that a = 3, b = 6 and c = --2. Evaluate $\frac{3c-4ac}{b}$
3.	Given that a = --2 and b = --3, find the value of 7a – 4b	8.	If a = 55 and b = 45, find the value of (a+b)(a – b)
4.	Given that a = 3, b = 6 and c = --2. Evaluate $\frac{3c-4ac}{b}$	9.	If r = 2 and t = --3, find the value of $r + t^r$
5.	Given that m = 3k and k = 5, find the value of 2k+6m	10.	Given that a = 2, r = 5 and x = 3, evaluate $a^r \div a^x$

SUBSTITUTION INVOLVING FRACTIONS

1.	Given that a = $\frac{3}{4}$ and $b = \frac{1}{3}$ find the value of a + b	5.	If a = 0.3, b = $\frac{5}{8}$ and $c = \frac{4}{5}$, $find\ the\ value\ of\ a + bc$

2.	If a = $\frac{1}{2}, c = \frac{2}{3}$ and $d = \frac{1}{4}$ find the value of ac + d	6.	If x = $\frac{1}{8}, y = \frac{2}{3}$ and $z = \frac{3}{4}$, find the value of $\frac{xy}{z}$
3.	If a = $\frac{1}{2}$ and $b = \frac{1}{3}, find\ the\ vaue\ of\ \frac{1}{a} - \frac{1}{b}$	7.	Given that p = 0.1, q = 0.2 and r = 0.3. Evaluate pq + r^2
4.	If a = 2, b = 0.5 and c = 4. What is the value of $\frac{ac}{b}$	8.	Given that p = $\frac{1}{2}, q = \frac{1}{3}$ and $r = \frac{1}{4}$. Find the value of $p^2 + q^2$

SUBSTITUTION INVOLVING COMPLETING TABLES

1. Given that x = 2y + 1. Complete the table below

x	1	___	5	___	9
y	___	1	___	3	___

2. Given that x – 3 = y. Complete the table below

x	--2	___	0	1	___	2
y	--5	--4	___	___	--2	___

3. Given that y = x – 2, complete the table below

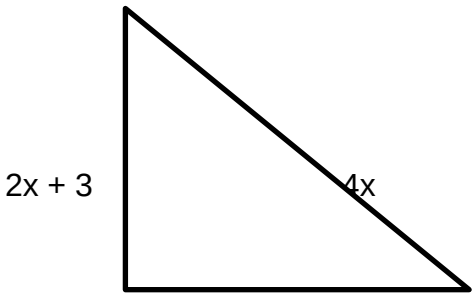
X	--3	--2	--1	0	___	___
y	--2	___	___	___	2	3

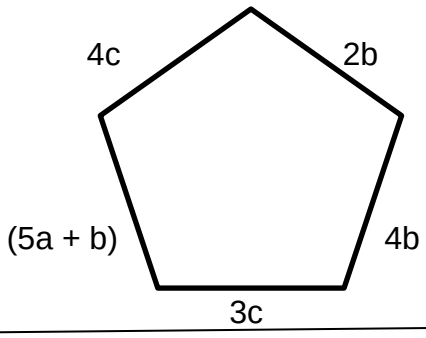
COLLECTION OF LIKE AND UNLIKE TERMS

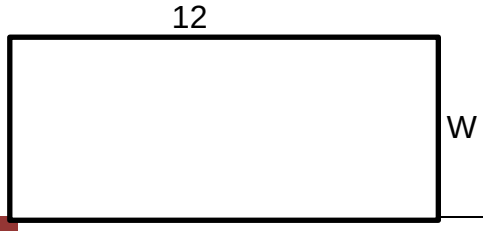
1.	Simplify: x + y + y + x + x	4.	Simplify: 2ab + ac + 5ab – 3ac
2.	Simplify: 6m – 2a 4m – 3a	5.	Simplify: 8m + 9 – 3m + 4
3.	Simplify: 5ab – 2xy – ab + 7xy	6.	Simplify: 6x – 5m + 3m – 4x

FINDING PERIMETER

Find the perimeter of the following figures







COLLECTION OF LIKE TERMS INVOLVING REMOVAL OF BRACKETS

1.	Simplify: 3(x + y)	6.	Simplify: 2(7 – a) – (8 – a)
2.	Simplify: --2(a – b)	7.	Simplify: 3m – (2 + m)
3.	Simplify: (x + 1) + (x + 2)	8.	Simplify: (3x + 5) – (x + 1)
4.	Simplify: 3(x + 2) + (x – 1)	9.	Simplify: (8m + 9) – (3m + 4)
5.	Simplify: 3(x + 1) – 2 (x – 1)	10.	Simplify: 5(t – 3) + (2t – 4)

ALGEBRAIC EXPRESSIONS WITH REMOVAL OF BRACKETS (COLLECTION OF LIKE TERMS)

1.	Add: x + 4 to x + 1	6.	Subtract: 2(p + 3q) from 6(2p – q)

2.	Add: x – 4 to 3x – 5	7.	Subtract 3(2w – 4) from 2(w + 3)
3.	Subtract y + 1 from 2y + 3	8.	Find the sum of 4a – 2b and 5x - 6
4.	Subtract: 3p – 1 from 5p – 3	9.	Subtract: 2x – 4 from 5x - 6
5.	Subtract: --3p + 6 from p + 2	10.	Subtract: --2(x + 1) from 3x - 3

ADDITION AND SUBTRACTION OF FRACTIONAL TERMS

1.	Simplify: $\frac{x}{2}+\frac{x}{3}$	5.	Simplify: 3c + $\frac{2c}{3}+\frac{5c}{2}$
2.	Simplify: $\frac{p+p}{3}$	6.	Simplify: $\frac{c}{2}+\frac{c}{7}$
3.	Workout: $\frac{p}{2}+\frac{p}{3}+\frac{p}{3}$	7.	Simplify: $\frac{7b}{4}+\frac{8b}{6}+\frac{b}{3}$

4.	Simplify: x + $\frac{x}{4} - \frac{x}{8}$	8.	Simplify: $\frac{m}{2} - \frac{m}{5}$

REMOVAL OF BRACKETS INVOLVING FRACTIONS

1.	Simplify: $\frac{1}{3}(3a + 9b))$	5.	Simplify: $\frac{1}{5}(20a - 15b)$
2.	Simplify: $\frac{3}{4}(6m - 12p)$	6.	Simplify: $\frac{2}{7}(42b - 14a)$
3.	Simplify: $\frac{5}{9}(18ab - 27x)$	7.	Simplify: $\frac{3}{4}(4x - 8y)$
4.	Simplify: $\frac{1}{3}(6x - 3m)$	8.	What is the product of $\frac{1}{7}$ and $(14w - 21)$

MORE ABOUT REMOVAL OF BRACKETS INVOLVING FRACTIONS

1.	Simplify: $\frac{1}{2}(2x+8y)+\frac{1}{3}(6x+9y)$	5.	Simplify: $\frac{1}{4}(3k+2)-\frac{1}{3}(k+1)$
2.	Simplify: $\frac{1}{2}(4a+6ab)-\frac{2}{3}(9a-12ab)$	6.	Simplify: $\frac{2}{5}(2x-3)-\frac{2}{7}(x+4)$
3.	Simplify: $\frac{1}{2}(x+1)+\frac{1}{3}(x-2)$	7.	Simplify: $\frac{1}{2}(2a-4b)-\frac{1}{3}(6a-12b)$
4.	Simplify: $\frac{2}{9}(18a-9)+\frac{3}{8}(24a-32b)$	8.	Simplify: $\frac{2}{3}(6q-12p)-\frac{3}{4}(12q-8p)$

WORD PROBLEM ON REMOVAL OF BRACKETS WITH FRACTIONS

1.	Simplify a half of (2x + 4y) plus a third of (6x + 9y)	5.	Simplify a half the sum of 6x and 24y minus a third the difference between 27x and 9y
2.	Subtract a half of (8x – 2y) from a third of (6x – 9y)	6.	Subtract $\frac{2}{3}(6a + 9b)$ from $\frac{3}{4}$ of $(8a - 12b)$
3.	What is the difference between a seventh of (7ab – 14pq) and a fifth of (10ab + 15pq)	7.	Add $\frac{1}{3}(27a - 9ab)$ to $\frac{1}{5}(25a - 3ab)$
4.	Simplify a half of (4a – 6b) plus a third of (6a – 9b)	8.	Simplify a half of (4a – 6b) plus a third of (6a – 9b

FACTORISING COMPLETELY

When factorizing completely, you need to get the common factor outside the brackets

1.	Factorize completely 4ab + 8b	5.	Factorize completely 24m – 8mn
2.	Factorize completely $3x^2 + 15x$	6.	Factorize completely 4ap – 2a
3.	Factorize completely 6ab + 9ac	7.	Factorize completely 6xy – 4xy
4.	Factorize completely 9x – 6y	8.	Factorize completely 8xy – 2px