MATHLETICS
Inspiring Better Results

Basic Algebra

Student Book - Series I-1

Mathletics Instant Workbooks

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Basic algebra

Student Book - Series I

Contents

Author of The Topics and Topic Tests: AS Kalra

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Basic algebra

Topic 1: Addition and subtraction of like terms

QUESTION **1** Simplify the following expressions by collecting like terms.

a $2x + 3x =$ _____ **b** $5x - 2x =$ _____

c $5a + 4a =$ _____ **d** $9y - 6y =$ _____

e $3y + 7y =$ _____ **f** $4q - 3q =$ _____

g $8m + 6m =$ _____ **h** $9a - a =$ _____

i $2b + 15b =$ _____ **j** $8t - 2t =$ _____

k $7n + 5n =$ _____ **l** $5mn + 3mn =$ _____

m $8p - 5p =$ _____ **n** $8xy + 7xy =$ _____

o $7p - 3p =$ _____ **p** $18x^2 - 12x^2 =$ _____

QUESTION **2** Simplify the following.

a $5p + 6p - 3p =$ _____ **b** $8m - 3m - 2m + 7m =$ _____

c $8x - 5x + 7x =$ _____ **d** $4xy + 6xy - 3xy - 2xy =$ _____

e $12y - 4y + 5y =$ _____ **f** $8k + 4k + 2k - 5k =$ _____

g $8xy + 2xy + 5xy =$ _____ **h** $9a + 2a + 3a - 7a =$ _____

i $6m - 3m + 10m =$ _____ **j** $11p + 5p - 7p =$ _____

k $5a + 7a + 3a + 6a =$ _____ **l** $6ab - 3ab - ab + 2ab =$ _____

m $8x^2 + 7x^2 - 6x^2 - 3x^2 =$ _____ **n** $6a^2 + 7a^2 + 8a^2 - 10a^2 =$ _____

o $4x - 2x + 9x - 6x =$ _____ **p** $11y - 6y - 3y - y =$ _____

QUESTION **3** Simplify by collecting like terms.

a $4x + 3x + 2y + 7y =$ _____ **b** $11a + 7b - 3a =$ _____

c $3m + 7m + 8n + 9m =$ _____ **d** $9c - 6c - 2c + 3d =$ _____

e $8a + 7a - 2m - 3m =$ _____ **f** $9x^2 - x^2 - 3x^2 =$ _____

g $3x + 2y + 5x =$ _____ **h** $12mn - 6mn + 3mn =$ _____

i $8y + 7x - 3x - 2x =$ _____ **j** $5x + 7y - 4y - 2x =$ _____

k $8m + 2n + 9n + 2n =$ _____ **l** $5t + 17 - 2t - 8 =$ _____

m $7y + 6y - 3x + 7x =$ _____ **n** $6a + 9 - 3a =$ _____

o $12 - 3x - 2x =$ _____ **p** $9m + 7mn - 6m - 2mn =$ _____

q $10m + 5n + 3n + 4m =$ _____ **r** $5x + 3y - 2x - 2y =$ _____

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Topic 2: Multiplication and division of pronumerals

Question 1 Find the products of the following.

a $7 \times 3a =$ _____ **b** $4a \times 9b =$ _____

c $4m \times 5n =$ _____ **d** $ab \times a =$ _____

e $(-2x) \times 5 =$ _____ **f** $(-8m) \times (-2m) =$ _____

g $4a \times (-3a) =$ _____ **h** $(-9m) \times (-3) =$ _____

i $8 \times 3b \times b =$ _____ **j** $(-5x) \times (-x) =$ _____

k $(-2a) \times (-3b) =$ _____ **l** $3a \times 4am =$ _____

m $4mn \times 3m \times 2n =$ _____ **n** $(-2p) \times 5 \times (-5p) =$ _____

o $6ab \times 5 =$ _____ **p** $(-6m) \times (-5mn) =$ _____

Question 2 Work out the following divisions.

a $\frac{12a}{4}$ _____ **b** $\frac{16m}{2m}$ _____

c $\frac{10a^2b}{5a^2}$ _____ **d** $25m \div 5m =$ _____

e $12a \div -6 =$ _____ **f** $-10pq \div 5p =$ _____

g $(-32a) \div (-8a) =$ _____ **h** $-48xy \div -16x =$ _____

i $50ab \div 25ab =$ _____ **j** $-9xy \div xy =$ _____

k $5x \div (-5) =$ _____ **l** $60m \div (-10m) =$ _____

m $18xy \div xy =$ _____ **n** $-18a \div 6a =$ _____

o $abc \div ab =$ _____ **p** $9ab \div 3a =$ _____

q $5m \div 4m =$ _____ **r** $(-36mn) \div (-9m) =$ _____

Question 3 Simplify the following.

a $2a \times 3a \times 4b =$ _____ **b** $5x \times 2x \times 4 =$ _____

c $9x \times 8 \div 12x =$ _____ **d** $5a \times 9ab \div a^2b =$ _____

e $-5a \times 6a \times (-2) =$ _____ **f** $9mn \times 3m \div n =$ _____

g $16xyz \div 8xy \div z =$ _____ **h** $15 \times 2m \div 3 =$ _____

i $9 \times 6m \div 3 =$ _____ **j** $(6a)^2 \div 9a =$ _____

k $(-3) \times (-2p) \times 7 =$ _____ **l** $64ab \div 8b \div 4q =$ _____

m $15mn \div -15mn =$ _____ **n** $(5ab)^2 \div 25a^2b =$ _____

o $8x \times -5 \times (-2x) =$ _____ **p** $-3a \times 2b \times -4a =$ _____

q $18xy \div 6x \div 3y =$ _____ **r** $12x \times 4x \div 16x =$ _____

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Topic 3: Indices

Question 1 Simplify the following.

a $x^5 \times x^2 =$ _____ **b** $n^9 \times n^6 =$ _____ **c** $q^3 \times q^7 =$ _____

d $a^7 \times a^7 =$ _____ **e** $9p^2 \times p^6 =$ _____ **f** $x^8 \times x^3 \times x^2 =$ _____

g $5x^6 \times 4x^5 =$ _____ **h** $a^2b \times a^3 =$ _____ **i** $10p^4 \times 10p^4 =$ _____

j $3x^4 \times 4x^3 =$ _____ **k** $9a^3 \times 6a^4 =$ _____ **l** $x^4y^3 \times x^5y^2 =$ _____

m $x^7 \times x^9 =$ _____ **n** $a^3b^3 \times a^2b^2 =$ _____ **o** $4x \times 9x^5 =$ _____

p $y^7 \times 8y^3 =$ _____ **q** $x^6 \times x^5 \times x^3 =$ _____ **r** $5a^2b \times 2a \times 3b =$ _____

Question 2 Simplify the following.

a $a^9 \div a^5 =$ _____ **b** $x^7 \div x^3 =$ _____ **c** $y^{12} \div y^{10} =$ _____

d $6x^7 \div x^5 =$ _____ **e** $18a^6 \div 9a^4 =$ _____ **f** $36m^7 \div 9m^6 =$ _____

g $15n^{10} \div 5n^6 =$ _____ **h** $9a^9 \div 9a^7 =$ _____ **i** $48a^6 \div 16a^4 =$ _____

j $a^{13} \div a^9 =$ _____ **k** $k^{12} \div k^5 =$ _____ **l** $p^7q^7 \div p^4q =$ _____

m $12a^{10} \div 6a^8 =$ _____ **n** $24m^7 \div 12m^3 =$ _____ **o** $m^6n^3 \div m^5 =$ _____

p $p^9q^6 \div p^6q^3 =$ _____ **q** $a^{10}n^7 \div a^8 =$ _____ **r** $12a^6b^4 \div 6a^5b^3 =$ _____

Question 3 Simplify the following.

a $(x^2)^3 =$ _____ **b** $(y^3)^5 =$ _____ **c** $(a^2)^4 =$ _____

d $(m^3)^3 =$ _____ **e** $(k^4)^2 =$ _____ **f** $(x^5)^7 =$ _____

g $(2x^3)^3 =$ _____ **h** $(3y^2)^3 =$ _____ **i** $(5m^3)^4 =$ _____

j $(2x^5)^3 =$ _____ **k** $(7p^2)^2 =$ _____ **l** $(a^2b)^3 =$ _____

m $(ab)^6 =$ _____ **n** $(x^2y^2)^3 =$ _____ **o** $(m^4n^3)^2 =$ _____

p $(3x^3y^4)^2 =$ _____ **q** $(8xy^2)^2 =$ _____ **r** $(10a^2b^3)^2 =$ _____

Question 4 Use the index laws to simplify the following.

a $x^6 \times x^3 =$ _____ **b** $y^9 \div y^3 =$ _____ **c** $(m^2)^5 =$ _____

d $a^2b^5 \times a^3b^3 =$ _____ **e** $(5m^2)^3 =$ _____ **f** $9p^2 \times 4p^7 =$ _____

g $(x^2)^3 \times x^5 =$ _____ **h** $(a^4)^3 \div a^9 =$ _____ **i** $5a^4b \times 6ab^2 =$ _____

j $5a^4 \times 3a^2 =$ _____ **k** $(6m)^2 \times (2m)^3 =$ _____ **l** $9ab \times a \times b =$ _____

m $8p^5 \div 4p^3 \times 6p =$ _____ **n** $a^2b \times a^2 \times b^2 =$ _____ **o** $x^9 \times x^7 \div x^{10} =$ _____

p $(2ab)^3 =$ _____ **q** $a^0 + (2a)^0 =$ _____ **r** $9x^0 =$ _____

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Topic 4: Grouping symbols

QUESTION **1** Expand the following expressions.

a $5(a + 3) =$ _____ **b** $6(x - 7) =$ _____

c $-2(6 + a) =$ _____ **d** $-5(x + 7) =$ _____

e $9(2a + 5) =$ _____ **f** $3(5x - 9) =$ _____

g $2a(6 + 3a) =$ _____ **h** $x(2x - 5) =$ _____

i $m(6m + 3) =$ _____ **j** $5x(x - 3) =$ _____

k $7n(2n - 3) =$ _____ **l** $-3a(a - 2) =$ _____

m $-2(a + 5) =$ _____ **n** $-7(3p - 4) =$ _____

o $5a(a - 1) =$ _____ **p** $-3x(2x - 2) =$ _____

q $-(x + 9) =$ _____ **r** $-(4y - 7) =$ _____

QUESTION **2** Expand and simplify by collecting like terms.

a $3(x + 5) + 6x =$ _____ **b** $6(a - 5) - 5a =$ _____

c $4(m - 3) + 2m =$ _____ **d** $2(x - 3) + 3x + 7 =$ _____

e $6y(y + 4) - 2y^2 =$ _____ **f** $6(m - 2) - 3m =$ _____

g $5x + 3(10 - x) =$ _____ **h** $9x + 3(x - 2) =$ _____

i $6m - 2(m + 1) =$ _____ **j** $2m + 3(m - 3) + 7 =$ _____

QUESTION **3** Expand and simplify.

a $3(x + 2) + 4(x - 2) =$ _____ **b** $8(m - 3) + 3(m - 2) =$ _____

c $5(p - 7) + 3(p + 2) =$ _____ **d** $8(x + 3) + 2(x - 1) =$ _____

e $4(x + 3) - 2(x + 1) =$ _____ **f** $x(x + 1) - (x - 3) =$ _____

g $5(p - 6) - 2(p - 1) =$ _____ **h** $p(5p + 6) - 3(2p - 3) =$ _____

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Topic 5: Substitution

QUESTION **1** If $a = 2$, $b = 3$, $c = 4$ and $d = 5$, evaluate the following.

a $abc =$ _____ **b** $a + b + c - d =$ _____ **c** $ab + bc =$ _____

d $a^2 + b^2 + c^2 =$ _____ **e** $bc \div a =$ _____ **f** $abcd =$ _____

g $b^2 + c^2 - ad =$ _____ **h** $b^2 + 10 =$ _____ **i** $3ab + 2cd =$ _____

j $3a^2c - d =$ _____ **k** $5c^2 - 12 =$ _____ **l** $a^3 + b^3 =$ _____

QUESTION **2** If $x = 5$, find the value of the following expressions.

a $3x + 2 =$ _____ **b** $65 - 4x =$ _____ **c** $4(x + 3) =$ _____

d $(2x - 7)^2 =$ _____ **e** $6x - x^2 =$ _____ **f** $2x\,(x - 3) =$ _____

g $(x + 2)^2 =$ _____ **h** $(x - 3)^2 =$ _____ **i** $x^3 =$ _____

j $(2x)^2 =$ _____ **k** $\sqrt{21 - x}$ _____ **l** $2x^2 =$ _____

m $(x - 3)^3 =$ _____ **n** $(x + 2)\,(x - 2) =$ _____ **o** $x^2 - 7 =$ _____

QUESTION **3** If $x = 6.5$, $y = 2.4$ and $z = 5.8$, find correct to one decimal place the value of

a $x + y =$ _____ **b** $x + y + z =$ _____ **c** $x + y - z =$ _____

d $xy =$ _____ **e** $xyz =$ _____ **f** $x^2 =$ _____

g $x^2 + z^2 =$ _____ **h** $y^3 =$ _____ **i** $\sqrt{yz} =$ _____

j $(x - z) + 3 =$ _____ **k** $x \div y =$ _____ **l** $(x + y) \div z =$ _____

m $(x + y)^2 =$ _____ **n** $\sqrt{x + y + z} =$ _____ **o** $\sqrt[3]{x + y + z} =$ _____

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Topic 6: Common factors

QUESTION **1** Factorise the following by taking the highest common factor out.

a $5a + 5 =$ _____ **b** $8x - 8 =$ _____ **c** $3y - 3 =$ _____

d $2x + 2 =$ _____ **e** $6m + 6 =$ _____ **f** $7m + 7 =$ _____

g $3p + 6 =$ _____ **h** $4q + 8 =$ _____ **i** $6x - 9y =$ _____

j $4x - 16 =$ _____ **k** $9b - 18 =$ _____ **l** $5a + 20 =$ _____

m $2a + 6 =$ _____ **n** $3m + 12 =$ _____ **o** $6n - 24 =$ _____

p $8x - 32 =$ _____ **q** $3a + 15 =$ _____ **r** $2a + 14 =$ _____

QUESTION **2** Factorise by taking the common factor out.

a $3a + 3b =$ _____ **b** $5m + 5n =$ _____ **c** $6p - 6q =$ _____

d $7a + 14b =$ _____ **e** $3l - 9m =$ _____ **f** $m^2 + 7m =$ _____

g $y^2 + 6y =$ _____ **h** $9x - 18y =$ _____ **i** $3a - 24b =$ _____

j $4x + 4y =$ _____ **k** $mp - 3p =$ _____ **l** $8x - 32y =$ _____

m $6x - 36 =$ _____ **n** $3m + 12m^2 =$ _____ **o** $5y - y^2 =$ _____

p $9x - 6 =$ _____ **q** $8m - 8n =$ _____ **r** $6x - 3x^2 =$ _____

s $2x^2 - 4x =$ _____ **t** $6pq - 12p^2 =$ _____ **u** $10x - 10y =$ _____

QUESTION **3** Factorise the following.

a $-3x + 6 =$ _____ **b** $-5x + 10 =$ _____ **c** $-4x + 8 =$ _____

d $-6x + 18 =$ _____ **e** $-2x + x^2 =$ _____ **f** $-6a + 24 =$ _____

g $-3a + 12 =$ _____ **h** $-4a + 16 =$ _____ **i** $-6a - 12 =$ _____

j $-4y - 8 =$ _____ **k** $-2x - 10 =$ _____ **l** $-8y - 4x =$ _____

m $-3p - 9q =$ _____ **n** $-5x - 25 =$ _____ **o** $-x - 5 =$ _____

QUESTION **4** Factorise.

a $7a + 7b =$ _____ **b** $4a - 20 =$ _____ **c** $9x - 9y =$ _____

d $3m + 15 =$ _____ **e** $6 - 6t =$ _____ **f** $m^2 - 4m =$ _____

g $5ab - a^2 =$ _____ **h** $7m - 14n =$ _____ **i** $8ab - 6a^2b =$ _____

j $-4 - 12a =$ _____ **k** $-3 - 15p =$ _____ **l** $-3m - 6n =$ _____

m $9m - 36 =$ _____ **n** $-4a - 20a^2 =$ _____ **o** $-x - 7 =$ _____

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Topic 7: Addition and subtraction of algebraic fractions

Question 1 Find the sum of these algebraic fractions.

a $\frac{x}{5}+\frac{x}{5}=$ _____ **b** $\frac{x}{3}+\frac{x}{3}=$ _____ **c** $\frac{a}{7}+\frac{a}{7}=$ _____

d $\frac{x}{2}+\frac{x}{2}=$ _____ **e** $\frac{m}{4}+\frac{m}{4}=$ _____ **f** $\frac{x}{7}+\frac{3x}{7}=$ _____

g $\frac{5a}{8}+\frac{a}{8}=$ _____ **h** $\frac{y}{3}+\frac{y}{4}=$ _____ **i** $\frac{2a}{3}+\frac{a}{5}=$ _____

j $\frac{2x}{7}+\frac{3x}{14}=$ _____ **k** $\frac{5m}{6}+\frac{m}{3}=$ _____ **l** $\frac{7a}{6}+\frac{a}{8}=$ _____

Question 2 Subtract the following algebraic fractions.

a $\frac{2x}{7}-\frac{x}{7}=$ _____ **b** $\frac{5p}{9}-\frac{4p}{9}=$ _____ **c** $\frac{2b}{3}-\frac{b}{3}=$ _____

d $\frac{3m}{4}-\frac{m}{4}=$ _____ **e** $\frac{x}{2}-\frac{x}{5}=$ _____ **f** $\frac{5p}{7}-\frac{2p}{7}=$ _____

g $\frac{a}{6}-\frac{a}{12}=$ _____ **h** $\frac{p}{18}-\frac{2p}{12}=$ _____ **i** $\frac{3x}{10}-\frac{3}{5}=$ _____

j $\frac{a+1}{2}-\frac{2a}{3}=$ _____ **k** $\frac{2x}{3}-\frac{x+1}{4}=$ _____ **l** $\frac{y}{2}-\frac{3y+1}{3}=$ _____

Question 3 Find the answers to the following.

a $\frac{2x}{3}+\frac{x}{3}=$ _____ **b** $\frac{5x}{8}-\frac{3x}{8}=$ _____ **c** $\frac{7x}{9}-\frac{2}{9}=$ _____

d $\frac{5p}{7}-\frac{3p}{7}=$ _____ **e** $\frac{2m}{5}-\frac{m}{5}=$ _____ **f** $\frac{p}{6}+\frac{2p}{3}=$ _____

g $\frac{3x}{7}-\frac{2x}{14}=$ _____ **h** $\frac{2a}{5}+\frac{a}{5}=$ _____ **i** $\frac{2x}{3}+\frac{x}{4}=$ _____

j $\frac{2a}{15}-\frac{a}{15}=$ _____ **k** $\frac{5a}{3}+\frac{a}{5}=$ _____ **l** $\frac{a+3}{2}+\frac{a-2}{3}=$ _____

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Topic 8: Multiplication and division of algebraic fractions

QUESTION 1 Find the product of these algebraic fractions.

a $\frac{x}{3} \times \frac{6}{x} =$ _____ **b** $\frac{5}{a} \times \frac{a}{7} =$ _____ **c** $\frac{24}{y} \times \frac{y}{8} =$ _____

d $\frac{mn}{5} \times \frac{15}{m} =$ _____ **e** $\frac{4l}{3} \times \frac{6}{8} =$ _____ **f** $\frac{xy}{7} \times \frac{21}{x} =$ _____

g $\frac{9a^2}{5} \times \frac{15}{18a} =$ _____ **h** $\frac{ab}{3} \times \frac{a}{b} =$ _____ **i** $\frac{p}{3} \times \frac{6}{2p} =$ _____

QUESTION 2 Divide the following algebraic fractions.

a $\frac{x}{5} \div \frac{x}{10} =$ _____ **b** $\frac{x}{4} \div \frac{x}{3} =$ _____ **c** $\frac{y}{3} \div \frac{y}{7} =$ _____

d $\frac{m}{3} \div \frac{m}{12} =$ _____ **e** $\frac{5m}{12} \div \frac{6m}{8} =$ _____ **f** $\frac{x}{y} \div \frac{y}{x} =$ _____

g $\frac{ab}{2} \div \frac{ac}{3} =$ _____ **h** $\frac{ab}{5} \div \frac{a}{15} =$ _____ **i** $\frac{m}{n} \div \frac{p}{q} =$ _____

j $\frac{6p}{5} \div \frac{2p}{3} =$ _____ **k** $\frac{2a}{5} \div \frac{4a}{7} =$ _____ **l** $\frac{p}{q} \div \frac{p}{q} =$ _____

QUESTION 3 Find the answers to the following.

a $18p^2 \div 6p =$ _____ **b** $\frac{a}{12} \times \frac{18}{2a} =$ _____ **c** $\frac{7p}{18} \times \frac{5}{14p} =$ _____

d $\frac{mn}{9} \times \frac{27}{m^2} =$ _____ **e** $\frac{3p}{4} \times \frac{7}{12p} =$ _____ **f** $\frac{p}{3} \times \frac{15}{p} =$ _____

g $\frac{m}{2} \div \frac{m}{4} =$ _____ **h** $\frac{m}{6} \div \frac{m^2}{18} =$ _____ **i** $\frac{2xy}{7} \times \frac{14}{x^2y^2} =$ _____

j $\frac{a}{b} \times \frac{b^2}{a} =$ _____ **k** $\frac{mn^2}{5p^2} \div \frac{m^2n^2}{10p^2} =$ _____ **l** $\frac{abc}{7} \div \frac{ab}{14} =$ _____

m $\frac{9mn}{2p} \times \frac{8p}{12m} =$ _____ **n** $\frac{ab^2}{ac} \times \frac{c^2}{a^2} =$ _____ **o** $\frac{2x}{y} \div \frac{4x}{y^2} =$ _____

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Topic 9: Problem solving and algebra

1 Write the sum of $2x$ and $3y$. _____

2 Write the product of m and n. _____

3 Write the average of $2x$, y and $3z$. _____

4 Find the expression 3 more than $2x$. _____

5 If the first number is x, write the next consecutive integer. _____

6 Find the area of a square with side length x metres. _____

7 Write the perimeter of a rectangle of length 15 cm and width 7 cm. _____

8 Find the perimeter of a square with side length 8 cm. _____

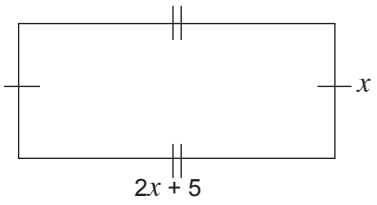
9 Find the volume of a cube with side length 5 cm. _____

10 Find the number x less than $3x + 4y$. _____

11 Increase $5x$ by 2. _____

12 Write the perimeter of the following shapes.

a



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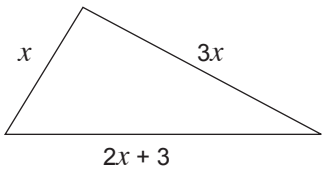
b



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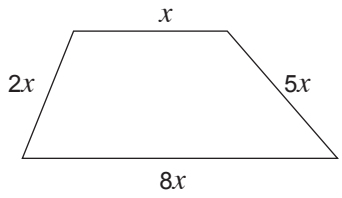
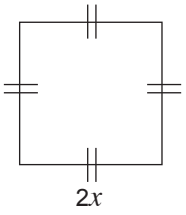
c



_____

13 Find the area of the following shapes.

a



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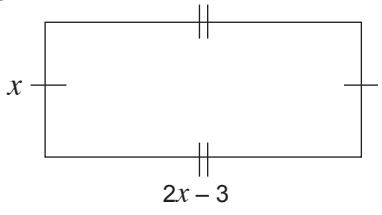
b



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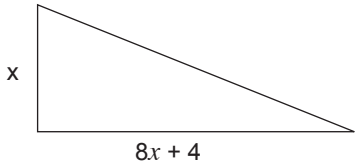
c



_____

14 Your pocket money is $\$x$ per week. How much do you earn in 7 weeks? _____

15 If I bought p pens and $3q$ pencils and my sister bought $5p$ pens and $2q$ pencils, how many pens and pencils do we have altogether? _____

16 Three different types of sweets cost $5y$, $3y$ and $2y$ cents each. If I buy 4 of each type, what would be the total cost? _____

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Topic Test — PART A

Instructions This part consists of 12 multiple-choice questions
Each question is worth 1 mark
Fill in only ONE CIRCLE for each question
Calculators are NOT allowed

Time allowed: 15 minutes **Total marks = 12**

					Marks
1	$8x - 3x - x$ equals				
	(A) $4x$	(B) $6x$	(C) $8x - 3$	(D) 5	1
2	$a^3 + a^3$ equals				
	(A) a^6	(B) a^9	(C) $2a^3$	(D) $2a^6$	1
3	$3ab^2$ equals				
	(A) $3 \times a \times b \times 2$	(B) $3 \times ab \times ab$	(C) $3ab \times 3ab$	(D) $3 \times a \times b \times b$	1
4	$12m^6 \div 4m^3$ equals				
	(A) $3m^3$	(B) $3m^2$	(C) $8m^3$	(D) $8m^2$	1
5	$2(x - 7) + x$ equals				
	(A) $3x - 7$	(B) $3x - 14$	(C) $x - 7$	(D) $x - 14$	1
6	The simplest fraction for $\frac{x}{2} + \frac{x}{3}$ is				
	(A) $\frac{x}{5}$	(B) $\frac{2x}{5}$	(C) $\frac{2x}{6}$	(D) $\frac{5x}{6}$	1
7	$4a^2 \times 5a^4$ equals				
	(A) $9a^6$	(B) $9a^8$	(C) $20a^6$	(D) $20a^8$	1
8	b is a factor of $ab + bc$. What is the other factor?				
	(A) a	(B) $a + bc$	(C) ac	(D) $a + c$	1
9	Simplify $\frac{a^6b}{a^2b^2}$				
	(A) $\frac{a^3}{b}$	(B) $\frac{a^4}{b}$	(C) a^3b	(D) a^4b	1
10	$x(x - 5)$ equals				
	(A) $x^2 - 5$	(B) $x^2 - 5x$	(C) $-4x$	(D) $-5x^2$	1
11	$k^4 \times (k^8 \div k^2)$ equals				
	(A) k^{16}	(B) k^{10}	(C) k^8	(D) k^6	1
12	If $a = 4$ and $b = 5$ then $3ab^2$ equals				
	(A) 120	(B) 300	(C) 1200	(D) 3600	1

Total marks achieved for PART A 12

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Basic algebra

Topic Test — PART B

Instructions This part consists of 15 questions
Each question is worth 1 mark
Write answers in the answers-only column

Time allowed: 20 minutes **Total marks = 15**

Questions	Answers only	Marks
Simplify the following.		
1 $-5a+6a+3a$		1
2 $(3ab)^2$		1
3 $\frac{1}{2}ab \times 32b^2$		1
4 $\frac{a^2}{b} \div \frac{1}{b}$		1
5 Expand and simplify $5a+3(2-a)$.		1
6 Simplify $\frac{8}{a} - \frac{3}{a}$		1
7 Expand and simplify $x(2x-1)-2(x^2-x)$.		1
8 Factorise $2p^2q+4pq^2$.		1
9 Expand and simplify $3(x+5)+4(x+3)-6(3x-2)$.		1
10 Expand $(y-2)(y+4)$.		1
11 Simplify $\frac{6x+9}{6}$.		1
12 Simplify $a^2b^3 \times 2(ab)^3 \div 8a^3b^4$.		1
13 Simplify $\frac{5x}{2y} \times \frac{8x}{25y}$.		1
14 Simplify $\frac{a^3b}{3} \div \frac{a}{6b}$.		1
15 Simplify $\frac{3x}{10} - \frac{x}{10} + \frac{7x}{10}$.		1

Total marks achieved for PART B 15

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