Ex 7.1

No calculators are permitted in this exercise.

Worked Example for Simple Questions

Name: _____

Complete the table.

Term	Coefficient	Pronumeral
$8m$	8	m

The number in front of the pronumeral is the coefficient

$8m$

The pronumeral is a letter that is a placeholder for a number.

Question 1

Complete the table.

Term	Coefficient	Pronumeral
$7t$		

Question 2

Complete the table.

Term	Coefficient	Pronumeral
$10a$		

Question 3

Complete the table.

Term	Coefficient	Pronumeral
$3y$		

Question 4

Complete the table.

Term	Coefficient	Pronumeral
$4f$		

Question 5

Complete the table.

Term	Coefficient	Pronumeral
$2m$		

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Worked Example for Standard Questions

What is the coefficient of the pronumeral?

$7 - k = 1$

Answer:

-1

The pronumeral is k.
The coefficient of k is -1.

Question 6

What is the coefficient of the pronumeral?

$-a + 8 = 1$

Question 7

What is the coefficient of the pronumeral?

$-g + 8 = 3$

Question 8

What is the coefficient of the pronumeral?

$0.2c - 5 = 8$

Question 9

What is the coefficient of the pronumeral?

$6 - 0.1f = 0.2$

Question 10

What is the coefficient of the pronumeral?

$8 - 2d = 1$

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A scientific calculator is permitted throughout this exercise.

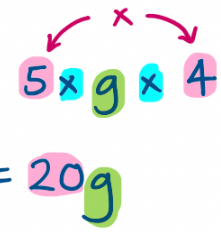
Ex 7.3

Worked Example for Simple Questions

Simplify $5 \times g \times 4$

Answer:

$20g$



1. Multiply the numbers
   $5 \times 4 = 20$
2. Hide the x signs and write the number before the pronumeral (letter).



Question 1

Simplify $8 \times k \times 2$

Answer:

Question 2

Simplify $7 \times n \times 2$

Answer:

Question 3

Simplify $2 \times f \times 6$

Answer:

Question 4

Simplify $3 \times b \times 6$

Answer:

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Question 5

Simplify $6 \times m \times 2$

Answer:

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Worked Example for Standard Questions

Evaluate the expression:

$2(8 - m)$ when $m = 10$

Answer:

-4

Substitute $m=10$ into the expression:

$2(8 - 10)$

Then calculate the answer, using correct order of operations (BIDMAS)

$2(8-10) = 2(-2)$
$= -4$

Question 6

Evaluate the expression:

$6(n - 1)$ when $n = -5$

Question 7

Evaluate the expression:

$\dfrac{15}{q + 7}$ when $q = 8$

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Question 8

Evaluate the expression:

$3(5 - p)$ when $p = -1$

Question 9

Evaluate the expression:

$\frac{9 + c}{3}$ when $c = -3$

Question 10

Evaluate the expression:

$\frac{7 - t}{2}$ when $t = 13$

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Ex 7.5

No calculators are permitted in this exercise.

Worked Example for Simple Questions

Simplify by collecting like terms.

$10a - 7a =$ $3a$

$10a - 7a = 3a$

↑ subtract ↑ write the pronumeral

Question 1

Simplify by collecting like terms.

$9x - 4x =$ ☐

Question 2

Simplify by collecting like terms.

$8t - 5t =$ ☐

Question 3

Simplify by collecting like terms.

$11b - 4b =$ ☐

Question 4

Simplify by collecting like terms.

$7w + 3w =$ ☐

Question 5

Simplify by collecting like terms.

$6a + 2a =$ ☐

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Worked Example for Standard Questions

Simplify by collecting like terms.

$7ab + ba =$ 8ab

The pronumeral is ab. (The order of the letters doesn't matter.)

7ab + ba = 7ab + ab

like terms

Add the coefficients. (The coefficient of ab is 1).
Then write ab.

7ab + 1ab = 8ab

7+1 = 8

Question 6

Simplify by collecting like terms.

$8mp + pm =$ ☐

Question 7

Simplify by collecting like terms.

$8xy + yx =$ ☐

Question 8

Simplify by collecting like terms.

$mn + 3nm =$ ☐

Question 9

Simplify by collecting like terms.

$mn + 3nm =$ ☐

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Question 10

Simplify by collecting like terms.

$yz + 4zy =$ $\square$

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Collecting Like Terms with Negatives

No calculators are permitted in this exercise.

Ex 7.7

Worked Example for Simple Questions

Simplify by collecting like terms:

$-8x - 2x =$ $-10x$

$-8x - 2x = -10x$

Subtract
$-8 - 2 = -10$

write the pronumeral

Question 1

Simplify by collecting like terms:

$-6p - p =$

Question 2

Simplify by collecting like terms:

$-5h - 4h =$

Question 3

Simplify by collecting like terms:

$-6d - 3d =$

Question 4

Simplify by collecting like terms:

$-5x - 3x =$

Question 5

Simplify by collecting like terms:

$-7g - 2g =$

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Collecting Like Terms with Negatives

Worked Example for Standard Questions

Simplify by collecting like terms.

$mn - 3nm =$ $-2mn$

mn and $-3nm$ are like terms.
Add the like terms.

$1\,mn - 3mn = -2mn$

$1 - 3 = -2$

$-2nm$ is also correct, but usually write the letters in alphabetical order.

Question 6

Simplify by collecting like terms.

$mn - 12nm =$ ☐

Question 7

Simplify by collecting like terms.

$fg - 6gf =$ ☐

Question 8

Simplify by collecting like terms.

$fg - 8gf =$ ☐

Question 9

Simplify by collecting like terms.

$12ab - 13ba =$ ☐

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Collecting Like Terms with Negatives

Question 10

Simplify by collecting like terms.

$-6pq - 12qp =$ ☐

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Ex 7.9

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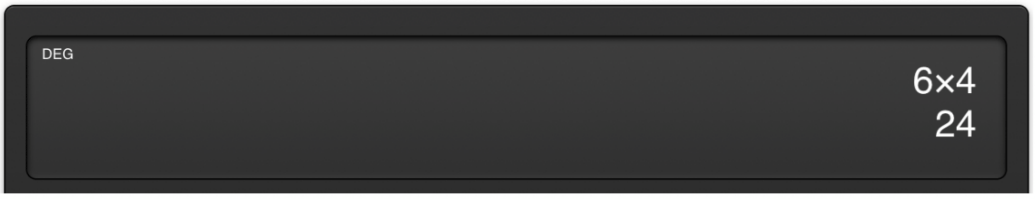
Worked Example for Simple Questions

Simplify the following:

$6a \times 4b =$ 24ab

6a x 4b = 24ab

1. Multiply the numbers
   6 x 4 = 24
2. Hide the x sign and write the number before the pronumerals (letters).



Question 1

Simplify the following:

$2m \times 5x =$ ☐

Question 2

Simplify the following:

$3m \times 4q =$ ☐

Question 3

Simplify the following:

$8b \times 2g =$ ☐

Question 4

Simplify the following:

$3p \times 5t =$ ☐

Question 5

Simplify the following:

$2t \times 4w =$ ☐

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Worked Example for Standard Questions

Simplify.

$7m \times -3n =$ -21 mn

multiply the coefficients : 7 x -3 = -21
multiply the pronumerals : m x n = mn

Question 6

Simplify.

$-4m \times 6n =$ ☐

Question 7

Simplify.

$3r \times -6s =$ ☐

Question 8

Simplify.

$-5t \times 2s =$ ☐

Question 9

Simplify.

$-6r \times -4s =$ ☐

Question 10

Simplify.

$-2g \times -3h =$ ☐

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Dividing Algebraic Terms

No calculators are permitted in this exercise.

Worked Example for Simple Questions

Express the algebraic division as a fraction.

$k \div 13 = \dfrac{k}{13}$

the numerator is what is being divided

the denominator is what you are dividing by

Question 1

Express the algebraic division as a fraction.

$x \div 3 = \dfrac{\square}{\square}$

Question 2

Express the algebraic division as a fraction.

$y \div 14 = \dfrac{\square}{\square}$

Question 3

Express the algebraic division as a fraction.

$v \div 9 = \dfrac{\square}{\square}$

Question 4

Express the algebraic division as a fraction.

$m \div 6 = \dfrac{\square}{\square}$

Question 5

Express the algebraic division as a fraction.

a ÷10= ----------

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Question 5

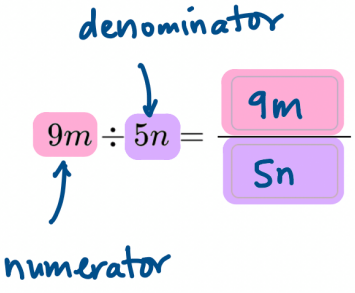
Express the algebraic division as a fraction.

$$a \div 10 = \frac{\square}{\square}$$

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Worked Example for Standard Questions

Express $9m \div 5n$ as an algebraic fraction.



Question 6

Express $5m \div 6p$ as an algebraic fraction.

$5m \div 6p =$ $\frac{\square}{\square}$

Question 7

Express $7m \div 5p$ as an algebraic fraction.

$7m \div 5p =$ $\frac{\square}{\square}$

Question 8

Express $6g \div 7p$ as an algebraic fraction.

$6g \div 7p =$ $\frac{\square}{\square}$

Question 9

Express $8a \div 3b$ as an algebraic fraction.

$8a \div 3b =$ $\frac{\square}{\square}$

Question 10

Express $4a \div 5b$ as an algebraic fraction.

$4a \div 5b =$ $\frac{\square}{\square}$

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