Exercise 4.1 No calculators are permitted in this exercise.

Name:

Worked Example for Simple Questions

$2(m+6)$ expands to:

$2(m+6) = 2\times m + 2\times 6$

$= 2m + 12$

The answer is B.

A	B
$2m+6$	$2m+12$

Question 1

$4(d+5)$ expands to:

Circle the correct option

A	B
$4d+20$	$4d+5$

Question 2

$5(w+6)$ expands to:

Circle the correct option

A	B
$5w+30$	$5w+6$

Question 3

$6(h+5)$ expands to:

Circle the correct option

A	B
$6h+5$	$6h+30$

Question 4

$2(b+5)$ expands to:

Circle the correct option

A	B
$2b+5$	$2b+10$

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Question 5

$3(y+5)$ expands to:

Circle the correct option

A

$3y+5$

B

$3y+15$

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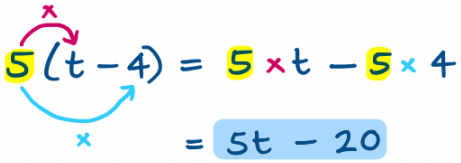
Worked Example for Standard Questions

Expand the bracket.

$5(t-4) =$ 5t-20



Question 6

Expand the bracket.

$5(2-m) =$

Question 7

Expand the bracket.

$3(4+b) =$

Question 8

Expand the bracket.

$8(d-1) =$

Question 9

Expand the bracket.

$7(y-10) =$

Question 10

Expand the bracket.

$11(2-x) =$

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Distributive Law with Negatives

Exercise 4.3	No calculators are permitted in this exercise.

Worked Example for Simple Questions

$-3(m-5)$ expanded is:

$-3(m-5) = -3 \times m + -3 \times -5$

$= -3m + 15$

A	B
$-3m+15$	$-3m-5$

The answer is A.

Question 1

$-6(f-3)$ expanded is:

Circle the correct option

A	B
$-6f+18$	$-6f-3$

Question 2

$-5(w-2)$ expanded is:

Circle the correct option

A	B
$-5w-2$	$-5w+10$

Question 3

$-7(h-2)$ expanded is:

Circle the correct option

A	B
$-7h-2$	$-7h+14$

Question 4

$-9(y-3)$ expanded is:

Circle the correct option

A	B
$-9y-3$	$-9y+27$

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Distributive Law with Negatives

Question 5

$-2(v-5)$ expanded is:

Circle the correct option

A

$-2v+10$

B

$-2v-5$

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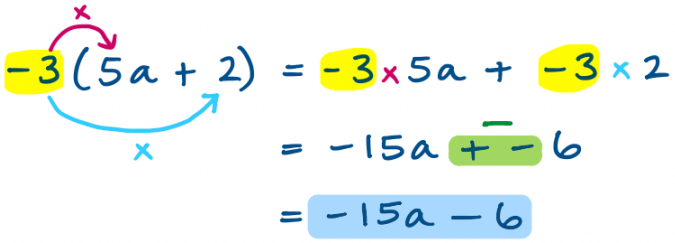
Worked Example for Standard Questions

Expand the bracket.

$-3(5a+2) =$ -15a-6



Question 6

Expand the bracket.

$-4(a+3) =$

Question 7

Expand the bracket.

$-2(3t-2) =$

Question 8

Expand the bracket.

$-4(2x+5) =$

Question 9

Expand the bracket.

$-5(2b+1) =$

Question 10

Expand the bracket.

$-6(2y-5) =$

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Distributive Law with Simplifying

Exercise 4.5	No calculators are permitted in this exercise.

Worked Example for Simple Questions

$2(x+4)+5x$ can be simplified to:

A	B	C
$7x+4$	$7x+8$	$2x+4$

$2(x+4)+5x$ ← expand the bracket

$= 2\times x + 2\times 4 + 5x$

$= 2x + 8 + 5x$ ← collect like terms

$= 7x + 8$

The answer is B.

Question 1

$6(g+2)+3g$ can be simplified to:

Circle the correct option

A

$9g+2$

B

$9g+12$

C

$6g+12$

Question 2

$5(b+3)+4b$ can be simplified to:

Circle the correct option

A

$9b+15$

B

$9b+3$

C

$5b+15$

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Distributive Law with Simplifying

Question 3

$5(x+3)+2x$ can be simplified to:

Circle the correct option

A

$7x+15$

B

$5x+15$

C

$7x+3$

Question 4

$3(w+2)+4w$ can be simplified to:

Circle the correct option

A

$3w+6$

B

$7w+2$

C

$7w+6$

Question 5

$4(y+2)+6y$ can be simplified to:

Circle the correct option

A

$10y+2$

B

$10y+8$

C

$4y+8$

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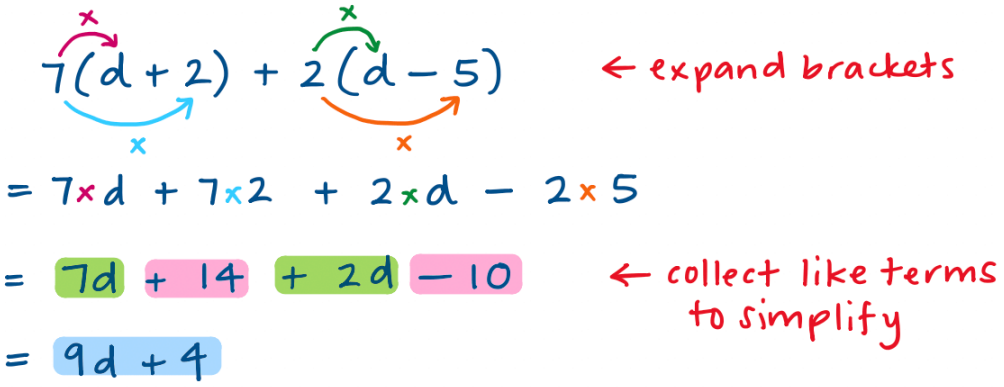
Worked Example for Standard Questions

Expand and simplify:

$7(d+2)+2(d-5)=$ 9d + 4



Question 6

Expand and simplify:

$10(a-2)-7(a+2)=$

Question 7

Expand and simplify:

$2(t+8)+3(t-1)=$

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Distributive Law with Simplifying

Question 8

Expand and simplify:

$5(b-2)+2(b-3)=$ ☐

Question 9

Expand and simplify:

$4(x+5)+3(x-3)=$ ☐

Question 10

Expand and simplify:

$2(m+6)+5(m+2)=$ ☐

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Distributive Law with Quadratic Terms

Exercise 4.7 — No calculators are permitted in this exercise.

Worked Example for Simple Questions

$x(x-9)$ expands to:

A: $x^2 - 9x$

B: $x^2 - 9$

$x(x-9) = x \times x - 9 \times x$

$= x^2 - 9x$

The answer is A.

Question 1

$a(a-6)$ expands to:

Circle the correct option

A $a^2 - 6$

B $a^2 - 6a$

Question 2

$d(d-10)$ expands to:

Circle the correct option

A $d^2 - 10d$

B $d^2 - 10$

Question 3

$x(x-5)$ expands to:

Circle the correct option

A $x^2 - 5x$

B $x^2 - 5$

Question 4

$c(c-8)$ expands to:

Circle the correct option

A $c^2 - 8$

B $c^2 - 8c$

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Question 5

$m(m-12)$ expands to:

Circle the correct option

A

m^2-12m

B

m^2-12

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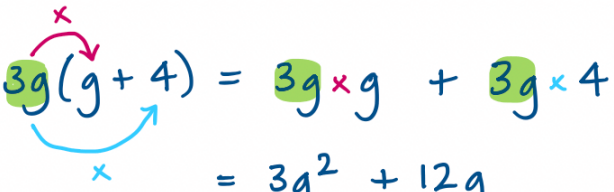
Worked Example for Standard Questions

$3g(g+4)$ expands to:



A	B	C	D
$3g^2+4$	g^2+12	$3g^2+12g$	$3g^2+12$

The answer is C.

Question 6

$5x(3-x)$ expands to:

Circle the correct option

A

$15-x^2$

B

$8x-5x^2$

C

$15x-5x^2$

D

$15x-x^2$

Question 7

$-2t(t+4)$ expands to:

Circle the correct option

A

$-2t^2-8$

B

$-2t^2-8t$

C

t^2-8

D

$-2t^2+4$

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Distributive Law with Quadratic Terms

Question 8

$3y(5+y)$ expands to:

Circle the correct option

A

$8y+3y^2$

B

$15+y^2$

C

$15y+y^2$

D

$15y+3y^2$

Question 9

$2x(x+3)$ expands to:

Circle the correct option

A

$2x^2+6x$

B

$2x^2+6$

C

$2x^2+3$

D

x^2+6

Question 10

$10a(a-2)$ expands to:

Circle the correct option

A

$10a^2-20a$

B

a^2-20

C

$10a^2-20$

D

$10a^2-2$

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Exercise 4.9 No calculators are permitted in this exercise.

Worked Example for Simple Questions

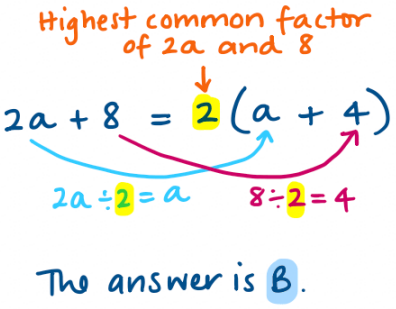
$2a + 8$ factorises to:

A

$2(a + 8)$

B

$2(a + 4)$



Question 1

$5s + 20$ factorises to:

Circle the correct option

A

$5(s + 20)$

B

$5(s + 4)$

Question 2

$3t + 12$ factorises to:

Circle the correct option

A

$3(t + 12)$

B

$3(t + 4)$

Question 3

$4y + 12$ factorises to:

Circle the correct option

A

$4(y + 3)$

B

$4(y + 12)$

Question 4

$4k + 40$ factorises to:

Circle the correct option

A

$4(k + 40)$

B

$4(k + 10)$

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Question 5

$2g + 18$ factorises to:

Circle the correct option

A

$2(g + 9)$

B

$2(g + 18)$

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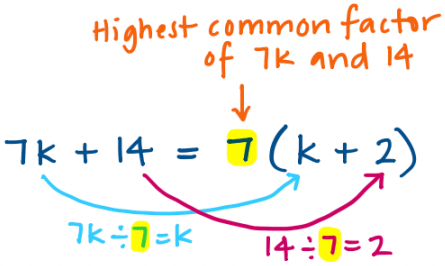
Worked Example for Standard Questions

Factorise fully.

$7k + 14 = 7\ (\ k+2\ )$



Question 6

Factorise fully.

$9h + 45 = \square\ (\ \square\ )$

Question 7

Factorise fully.

$10z + 60 = \square\ (\ \square\ )$

Question 8

Factorise fully.

$21 + 3a = \square\ (\ \square\ )$

Question 9

Factorise fully.

$4t + 8 = \square\ (\ \square\ )$

Question 10

Factorise fully.

$33 + 11y = \square\ (\ \square\ )$

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Factorising with Quadratic Terms

Exercise 4.11 No calculators are permitted in this exercise.

Worked Example for Simple Questions

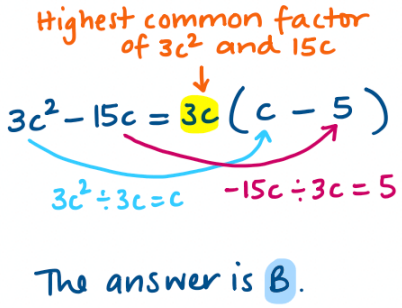
$3c^2 - 15c$ factorises to:

A

$3c(c - 15)$

B

$3c(c - 5)$



Question 1

$4x^2 - 8x$ factorises to:

Circle the correct option

A

$4x(x - 8)$

B

$4x(x - 2)$

Question 2

$5b^2 - 15b$ factorises to:

Circle the correct option

A

$5b(b - 15)$

B

$5b(b - 3)$

Question 3

$10a^2 - 20a$ factorises to:

Circle the correct option

A

$10a(a - 20)$

B

$10a(a - 2)$

Question 4

$2x^2 - 8x$ factorises to:

Circle the correct option

A

$2x(x - 8)$

B

$2x(x - 4)$

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Question 5

$9y^2 - 18y$ factorises to:

Circle the correct option

A

$9y(y - 2)$

B

$9y(y - 18)$

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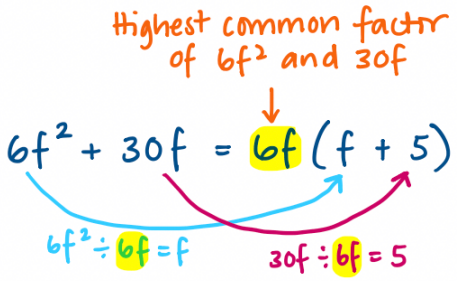
Worked Example for Standard Questions

Factorise fully.

$6f^2 + 30f =$ $6f$ ($f+5$)



Question 6

Factorise fully.

$12t + 3t^2 =$ ( )

Question 7

Factorise fully.

$2b^2 + 18b =$ ( )

Question 8

Factorise fully.

$3k^2 + 15k =$ ( )

Question 9

Factorise fully.

$3n^2 + 9n =$ ( )

Question 10

Factorise fully.

$5m^2 + 30m =$ ( )

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