

Examples



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Workout

Question 1: Expand the following brackets

- | | | | |
|------------------|-------------------|------------------|-----------------------|
| (a) $5(y + 3)$ | (b) $4(a + 2)$ | (c) $8(w + 10)$ | (d) $3(x - 7)$ |
| (e) $9(s - 1)$ | (f) $2(8 - t)$ | (g) $7(4 + h)$ | (h) $10(a + 2b + 3c)$ |
| (i) $4(3y + 2)$ | (j) $5(2p - 1)$ | (k) $3(7a + 2)$ | (l) $9(2x - 5)$ |
| (m) $5(4 + 3t)$ | (n) $7(9 - 2c)$ | (o) $8(3w + 1)$ | (p) $9(1 - 4p)$ |
| (q) $11(2k - 5)$ | (r) $20(6a + 5c)$ | (s) $3(15w - 7)$ | (t) $3(9 - 2a)$ |

Question 2: Expand the following brackets

- | | | | |
|-----------------|------------------|------------------|-------------------|
| (a) $-2(w + 5)$ | (b) $-3(c + 7)$ | (c) $-8(c + 7)$ | (d) $-10(y - 2)$ |
| (e) $-7(g - 3)$ | (f) $-4(2w + 3)$ | (g) $-9(3w - 5)$ | (h) $-9(5x - 1)$ |
| (i) $-5(6 - c)$ | (j) $-6(4 + 3m)$ | (k) $-2(1 + 9c)$ | (l) $-5(8a - 7w)$ |

Question 3: Expand the following brackets

- | | | | |
|------------------|------------------|------------------|-------------------|
| (a) $a(c + 2)$ | (b) $c(d - 3)$ | (c) $a(b + c)$ | (d) $w(8 - y)$ |
| (e) $c(5 + a)$ | (f) $w(a - 9)$ | (g) $y(s + t)$ | (h) $2a(c - 3)$ |
| (i) $5x(y + 8)$ | (j) $3a(2c + 9)$ | (k) $6g(2c - 1)$ | (l) $9k(2 + d)$ |
| (m) $5(2f + 9w)$ | (n) $3y(5p + 2)$ | (o) $2s(t + 1)$ | (p) $-4a(8x - 3)$ |

Question 4: Expand the following brackets

- | | | | |
|-----------------|------------------|------------------|-------------------|
| (a) $a(a + 2)$ | (b) $y(y - 5)$ | (c) $w(a + w)$ | (d) $c(9 - c)$ |
| (e) $p(2p + 5)$ | (f) $2w(3w - 1)$ | (g) $9y(2y + 3)$ | (h) $4c(2a + 5c)$ |

Expanding Brackets

Video 13 on www.corbettmaths.com

- (i) $2u(3 - u)$ (j) $m(m^2 + 3)$ (k) $y(y^2 - 7)$ (l) $g^2(g - 8)$
 (m) $2w(w^2 + 6)$ (n) $4a(2a^2 - 3)$ (o) $5c(3c^2 - a)$ (p) $8w(3w^2 + 3y)$
 (q) $x^2(x^2 + 4)$ (r) $3w^2(7 + 2w^2)$

Question 5: Expand and simplify

- (a) $5(y + 3) + 2(y + 7)$ (b) $6(2w + 5) + 9(w + 2)$ (c) $3(y - 2) + 4(2y + 5)$
 (d) $7(2g + 3) - 5(g + 2)$ (e) $6(x - 2) - 4(x - 8)$ (f) $2(3y - 8) - 5(2y - 1)$
 (g) $8(5 + 2m) + 3(5 - 3m)$ (h) $4(w + 7) - 2(2w + 1)$ (i) $9(1 + 2y) + 3(3 - y)$

Question 6: Expand and simplify

- (a) $w(w + 5) + w(w + 7)$ (b) $2g(4g + 3) + g(g - 7)$ (c) $n(n - 4) - n(5 - n)$
 (d) $2e(4e + 3) - 3e(e - 5)$ (e) $a(3 + c) + c(a + 2)$ (f) $m(a + 7) - a(4 - 3m)$
 (g) $8c(8 - 3a) + 3(4 - c)$ (h) $5y(3y + z) - 2y(4y - 3z)$ (i) $4c(3c - c^2) - 2c^2(4 - 5c)$

Apply

Question 1: Can you spot any mistakes in the questions below.

Expand $3(2y - 1)$

$$6y - 1$$

Multiply out $x(x + 3)$

$$2x + 3x = 5x$$

Expand and simplify $6(w + 3) - 2(w - 5)$

$$\begin{aligned} &6w + 18 - 2w - 10 \\ &= 4w + 8 \end{aligned}$$

Answers



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Name: _____

Exam Style Questions

Expanding Two Brackets



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Ensure you have: Pencil, pen, ruler, protractor, pair of compasses and eraser

You may use tracing paper if needed

Guidance

1. Read each question carefully before you begin answering it.
2. Don't spend too long on one question.
3. Attempt every question.
4. Check your answers seem right.
5. Always show your workings

Revision for this topic

www.corbettmaths.com/contents

Video 14



1. Expand and simplify $(y + 3)(y + 5)$

.....
(2)

2. Expand and simplify $(x + 5)(x - 1)$

.....
(2)

3. Expand and simplify $(w - 2)(w - 7)$

.....
(2)

4. Expand and simplify $(x - 10)(x + 3)$

.....
(2)

5. Expand and simplify $(2y + 1)(y + 3)$

.....
(2)

6. Expand and simplify $(3x - 2)(2x + 3)$

.....
(2)

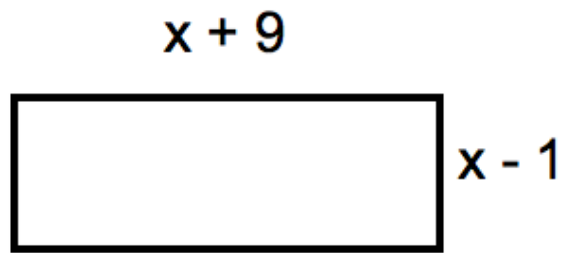
7. Expand and simplify $(5y - 1)(y - 2)$

.....
(2)

8. Expand and simplify $(x - 7)^2$

.....
(2)

9. A rectangle is shown below.



The length of the rectangle is $x + 9$ cm.

The width of the rectangle is $x - 1$ cm.

Form an expression for the area of the rectangle.

.....
(3)

-
10. Expand and simplify $(3 + g)(5 - g)$

.....
(2)

11. Expand and simplify $(y^2 + y)(y + 3)$

.....
(2)

12. Expand and simplify $(x - 3)(x + 3)$

.....
(2)

13. Expand and simplify $(w + 3)(w + 4) + (w + 2)(w + 7)$

.....
(3)

14. Expand and simplify $(3y - 5)(y + 4) - (y - 3)(y - 5)$

.....
(3)

Expanding Three Brackets

Video 15 on www.corbettmaths.com

Examples



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Workout

Question 1: Expand and simplify

- (a) $(x + 3)(x + 2)(x + 1)$ (b) $(x + 2)(x + 2)(x + 5)$ (c) $(x + 3)(x - 2)(x + 1)$
 (d) $(x - 1)(x - 2)(x + 7)$ (e) $(x - 2)(x - 3)(x - 4)$ (f) $(x - 6)(x + 1)(x - 2)$
 (g) $(2x + 1)(x + 3)(x + 1)$ (h) $(3x - 2)(x + 5)(x - 1)$ (i) $(5x + 3)(x - 1)(x + 2)$
 (j) $x(x - 3)(2x + 5)$ (k) $(3x + 5)(3x + 2)(x - 10)$

Question 2: Expand and simplify

- (a) $(x + 2)^3$ (b) $(x + 5)^3$ (c) $(x - 3)^3$
 (d) $(x - 5)^3$ (e) $(x + 1)(x + 3)^2$ (f) $(x - 5)(x - 4)^2$
 (g) $(2x + 3)^3$ (h) $(4 - x)^3$ (i) $(5 - 2x)^3$
 (j) $(x + 2)(3 - x)^2$ (k) $x(x + 6)^2$

Question 3: Expand and simplify

- (a) $(3x + 2)(x + 1)(x + 5) + (x + 3)^3$ (b) $(2x - 3)^3 - (x - 4)^3$

Apply

Question 1: Given $(x + 3)(x + a)(x + 7) = x^3 + 15x^2 + 71x + 105$, find a.

Question 2: Given $(ax + 1)(x - 3)(x + b) = 2x^3 - 3x^2 - 8x - 3$, find a and b.

Question 3: Given $(x + a)^2(x - 2) = x^3 + bx^2 + 12x - 72$, find a and b

Answers



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Workout

Question 1

- (a) $5y + 15$ (b) $4a + 8$ (c) $8w + 80$ (d) $3x - 21$
(e) $9s - 9$ (f) $16 - 2t$ (g) $28 + 7h$ (h) $10a + 20b + 30c$
(i) $12y + 8$ (j) $10p - 5$ (k) $21a + 6$ (l) $18x - 45$
(m) $20 + 15t$ (n) $63 - 14c$ (o) $24w + 8$ (p) $9 - 36p$
(q) $22k - 55$ (r) $120a + 100c$ (s) $45w - 21$ (t) $27 - 6a$

Question 2:

- (a) $-2w - 10$ (b) $-3c - 21$ (c) $-8c - 56$ (d) $-10y + 20$
(e) $-7g + 21$ (f) $-8w - 12$ (g) $-27w + 45$ (h) $-45x + 9$
(i) $-30 + 5c$ (j) $-24 - 18m$ (k) $-2 - 18c$ (l) $-40a + 35w$

Question 3:

- (a) $ac + 2a$ (b) $cd - 3c$ (c) $ab + ac$ (d) $8w - wy$
(e) $5c + ac$ (f) $aw - 9w$ (g) $sy + ty$ (h) $2ac - 6a$
(i) $5xy + 40x$ (j) $6ac + 27a$ (k) $12cg - 6g$ (l) $18k + 9dk$
(m) $10f + 45w$ (n) $15py + 6y$ (o) $2st + 2s$ (p) $-32ax + 12a$

Question 4:

- (a) $a^2 + 2a$ (b) $y^2 - 5y$ (c) $aw + w^2$ (d) $9c - c^2$
(e) $2p^2 + 5p$ (f) $6w^2 - 2w$ (g) $18y^2 + 27y$ (h) $8ac + 20c^2$
(i) $6u - 2u^2$ (j) $m^3 + 3m$ (k) $y^3 - 7y$ (l) $g^3 - 8g^2$
(m) $2w^3 + 12w$ (n) $8a^3 - 12a$ (o) $15c^3 - 5ac$ (p) $24w^3 + 24wy$
(q) $x^4 + 4x^2$ (r) $21w^2 + 6w^4$

Question 5:

- (a) $7y + 29$ (b) $21w + 48$ (c) $11y + 14$ (d) $9g + 11$
(e) $2x + 20$ (f) $-4y - 11$ (g) $55 + 7m$ (h) 26
(i) $18 + 15y$

Question 6:

- (a) $2w^2 + 12w$ (b) $9g^2 - g$ (c) $2n^2 - 9n$
(d) $5e^2 + 21e$ (e) $3a + 2ac + 2c$ (f) $4am + 7m - 4a$
(g) $61c - 24ac + 12$ (h) $7y^2 + 11yz$ (i) $4c^2 + 6c^3$

Apply

Question 1(a) the -1 needed to be multiplied by 3 as well. Answer = $6y - 3$

Question 1(b) x multiplied by $x = x^2$. So the answer is $x^2 + 3x$

Question 1(c) -2 multiplied by -5 is +10, not -10. Answer $4w + 28$.

Name: _____

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Revision for this topic

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Video 14



1. Expand and simplify $(y + 3)(y + 5)$

$$y^2 + 5y + 3y + 15$$

$$\underline{y^2 + 8y + 15}$$

(2)

2. Expand and simplify $(x + 5)(x - 1)$

$$x^2 - x + 5x - 5$$

$$\underline{x^2 + 4x - 5}$$

(2)

3. Expand and simplify $(w - 2)(w - 7)$

$$w^2 - 7w - 2w + 14$$

$$\underline{w^2 - 9w + 14}$$

(2)

4. Expand and simplify $(x - 10)(x + 3)$

$$x^2 + 3x - 10x - 30$$

$$\underline{x^2 - 7x - 30}$$

(2)

5. Expand and simplify $(2y + 1)(y + 3)$

$$2y^2 + 6y + y + 3$$

$$\underline{2y^2 + 7y + 3}$$

(2)

6. Expand and simplify $(3x - 2)(2x + 3)$

$$6x^2 + 9x - 4x - 6$$

$$\underline{6x^2 + 5x - 6}$$

(2)

7. Expand and simplify $(5y - 1)(y - 2)$

$$5y^2 - 10y - y + 2$$

$$\underline{5y^2 - 11y + 2}$$

(2)

8. Expand and simplify $(x - 7)^2$

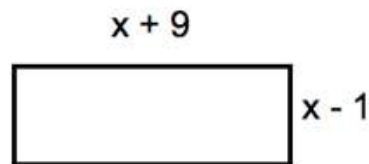
$$(x - 7)(x - 7)$$

$$x^2 - 7x - 7x + 49$$

$$\underline{x^2 - 14x + 49}$$

(2)

9. A rectangle is shown below.



The length of the rectangle is $x + 9$ cm.

The width of the rectangle is $x - 1$ cm.

Form an expression for the area of the rectangle.

$$(x+9)(x-1)$$
$$x^2 - x + 9x - 9$$

$$x^2 + 8x - 9$$

(3)

-
10. Expand and simplify $(3 + g)(5 - g)$

$$15 - 3g + 5g - g^2$$

$$15 + 2g - g^2$$

(2)

11. Expand and simplify $(y^2 + y)(y + 3)$

$$y^3 + 3y^2 + y^2 + 3y$$

$$y^3 + 4y^2 + 3y$$

(2)

12. Expand and simplify $(x - 3)(x + 3)$

$$x^2 + 3x - 3x - 9$$

$$x^2 - 9$$

(2)

13. Expand and simplify $(w + 3)(w + 4) + (w + 2)(w + 7)$

$$(w^2 + 4w + 3w + 12) + (w^2 + 7w + 2w + 14)$$

$$(w^2 + 7w + 12) + (w^2 + 9w + 14)$$

$$= 2w^2 + 16w + 26$$

$$2w^2 + 16w + 26$$

(3)

14. Expand and simplify $(3y - 5)(y + 4) - (y - 3)(y - 5)$

$$(3y^2 + 12y - 5y - 20) - (y^2 - 5y - 3y + 15)$$

$$(3y^2 + 7y - 20) - (y^2 - 8y + 15)$$

$$3y^2 + 7y - 20 - y^2 + 8y - 15$$

$$2y^2 + 15y - 35$$

(3)

Workout

Question 1

- (a) $x^3 + 6x^2 + 11x + 6$
- (b) $x^3 + 9x^2 + 24x + 20$
- (c) $x^3 + 2x^2 - 5x - 6$
- (d) $x^3 + 4x^2 - 19x + 14$
- (e) $x^3 - 9x^2 + 26x - 24$
- (f) $x^3 - 7x^2 + 4x + 12$
- (g) $2x^3 + 9x^2 + 10x + 3$
- (h) $3x^3 + 10x^2 - 23x + 10$
- (i) $5x^3 + 8x^2 - 7x - 6$
- (j) $2x^3 - x^2 - 15x$
- (k) $9x^3 - 69x^2 - 200x - 100$

Question 2

- (a) $x^3 + 6x^2 + 12x + 8$
- (b) $x^3 + 15x^2 + 75x + 125$
- (c) $x^3 - 9x^2 + 27x - 27$
- (d) $x^3 - 15x^2 + 75x - 125$
- (e) $x^3 + 7x^2 + 15x + 9$
- (f) $x^3 - 13x^2 + 56x - 80$
- (g) $8x^3 + 36x^2 + 54x + 27$
- (h) $64 - 48x + 12x^2 - x^3$
- (i) $125 - 150x + 60x^2 - 8x^3$
- (j) $x^3 - 4x^2 - 3x + 18$
- (k) $x^3 + 12x^2 + 36x$

Question 3

(a) $4x^3 + 29x^2 + 54x + 37$

(b) $7x^3 - 24x^2 + 6x + 37$

Apply

Question 1: $a=5$

Question 2: $a=2$ and $b=1$

Question 3: $a=6$ and $b=10$