THE STRIVING

MUSLIM ACADEMY

Islamic and Academic Education

PRACTICE PACK · ONE TOPIC UNTIL IT IS SECURE

Algebra Basics

Collecting like terms, expanding brackets, and solving equations up to letters on both sides.

WHAT IS INSIDE

- How to use this pack
- Collecting like terms
- Expanding brackets
- Solving two step equations
- Equations with brackets
- Letters on both sides
- In words
- All the answers

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6 sets of questions · every answer at the back

Written for a parent teaching at home. No training assumed, and nothing else to buy.

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Collecting like terms

Read the worked example aloud together, then one row a day.



One worked for you

The question. 3x + 2y + 4x minus y.

Gather the x terms. 3x and 4x make 7x.

Gather the y terms. 2y take away 1y leaves 1y, written as y.

Answer. 7x + y. You cannot add x to y, any more than cats to chairs.

WORDS YOU CAN USE

Only the same letters can be added together.

Underline the x terms in one colour and the y terms in another.

6x + 4y + 2x − 2y = [1]	3x + 7y + 9x − 5y = [2]	7x + 4y + 4x − 5y = [3]	8x + 2y + 3x − 6y = [4]
4x + 3y + 4x − 3y = [5]	9x + 6y + 4x − 7y = [6]	2x + 2y + 7x − 7y = [7]	2x + 7y + 3x − 3y = [8]
7x + 5y + 8x − 3y = [9]	9x + 7y + 8x − 2y = [10]	5x + 3y + 6x − 3y = [11]	8x + 4y + 7x − 3y = [12]
7x + 2y + 3x − 7y = [13]	4x + 4y + 7x − 4y = [14]	2x + 6y + 6x − 3y = [15]	6x + 3y + 4x − 4y = [16]

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Expanding brackets

Read the worked example aloud together, then one row a day.



One worked for you

The question. 4(x + 3).

The 4 multiplies everything inside. Both terms, not just the first.

Four times x is 4x. Four times 3 is 12.

Answer. 4x + 12. Draw two arrows from the 4 so you do not forget the second.

WORDS YOU CAN USE

Two arrows. The number outside touches both things inside.

The commonest mistake in algebra is forgetting the second one.

1 **9(x – 2) =**	2 **8(x – 1) =**	3 **9(x + 8) =**	4 **4(x + 2) =**
5 **8(x + 3) =**	6 **3(x – 8) =**	7 **2(x + 4) =**	8 **4(x – 1) =**
9 **3(x + 9) =**	10 **4(x – 8) =**	11 **3(x + 2) =**	12 **6(x – 9) =**
13 **2(x + 2) =**	14 **3(x + 1) =**	15 **9(x – 8) =**	16 **5(x + 9) =**

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In words

Read the worked example aloud together, then one row a day.

One worked for you

Call the number x. That is the whole trick of algebra.

Write what was done to it. Multiplied by 3 and 5 added: 3x + 5.

Write the equation. 3x + 5 = 20.

Solve it. x = 5. Then read the question again to check what it asked for.

WORDS YOU CAN USE

Call the unknown thing x and write down what happened to it.

The equation writes itself once you have done that.

1 Aisha thinks of a number, multiplies it by 4 and adds 7. The answer is 39. What was the number?

2 Yusuf thinks of a number, multiplies it by 3 and adds 6. The answer is 48. What was the number?

3 Khadijah thinks of a number, multiplies it by 3 and adds 12. The answer is 33. What was the number?

4 Musa thinks of a number, multiplies it by 4 and adds 3. The answer is 63. What was the number?

5 Zainab thinks of a number, multiplies it by 2 and adds 3. The answer is 25. What was the number?

6 Ibrahim thinks of a number, multiplies it by 2 and adds 5. The answer is 23. What was the number?

7 Maryam thinks of a number, multiplies it by 3 and adds 8. The answer is 26. What was the number?

8 Bilal thinks of a number, multiplies it by 5 and adds 12. The answer is 57. What was the number?

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SAMPLE PAGES

You have read a few pages. The pack is longer.

What you are holding is a short sample, taken from different parts of the pack so that you can see how a week is planned and what a child is actually asked to do, before you decide.

The complete pack, and the rest of the academic materials, are on our website: schemes of work for a parent teaching at home, and practice packs for the skills children get stuck on.

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Members of the homeschool community do not buy these. If you have joined the community, the pack for the term you are working on is given to you at no cost.

Our Islamic Education classes are free. These packs are part of what pays the teachers who teach them.