THE STRIVING

MUSLIM ACADEMY

Islamic and Academic Education

YEARS 7 TO 9 · MATHEMATICS · PRACTICE PACK

Algebra

The key stage 3 programme of study. The sets get harder through the pack, from arriving in Year 7 to leaving Year 9, and every question is worked through at the back.

WHAT IS INSIDE

- Notation and collecting like terms
- Brackets and factorising
- Substituting into expressions
- Solving linear equations
- Rearranging a formula
- Sequences and straight-line graphs
- How each one is worked

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6 sets · a hint on every question

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

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Substituting into expressions

These get harder as you go down. Do them in order.



1. **Work out the value of 2x + 2 when x = 8**
   Put 8 in place of every x, then work it out.

2. **Work out the value of 6x + 4 when x = 8**
   Put 8 in place of every x, then work it out.

3. **Work out the value of 2x + 11 when x = 11**
   Put 11 in place of every x, then work it out.

4. **Work out the value of 9x + 3 when x = 7**
   Put 7 in place of every x, then work it out.

5. **Work out the value of 4x + 7 when x = 10**
   Put 10 in place of every x, then work it out.

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Sequences and straight-line graphs, continued



6. **A line has equation y = 4x + 5. What is y when x = 6?**
   Put 6 in for x.

7. **A line has equation y = 2x + 9. What is y when x = 5?**
   Put 5 in for x.

8. **For the line y = 5x + 7, write down its gradient and where it crosses the y axis.**
   In y = mx + c the gradient is m and the crossing point is c.

9. **For the line y = 5x + 9, write down its gradient and where it crosses the y axis.**
   In y = mx + c the gradient is m and the crossing point is c.

10. **For the line y = 4x + 6, write down its gradient and where it crosses the y axis.**
    In y = mx + c the gradient is m and the crossing point is c.

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How each one is worked, continued

BRACKETS AND FACTORISING, CONTINUED



8. Factorise 56x + 21

1. Both 56 and 21 divide by 7.
2. Take the 7 outside the bracket.
3. So it factorises to 7(8x + 3).

Answer: **7(8x + 3)**

9. Factorise 28x + 21

1. Both 28 and 21 divide by 7.
2. Take the 7 outside the bracket.
3. So it factorises to 7(4x + 3).

Answer: **7(4x + 3)**

10. Factorise 15x + 9

1. Both 15 and 9 divide by 3.
2. Take the 3 outside the bracket.
3. So it factorises to 3(5x + 3).

Answer: **3(5x + 3)**

11. Factorise 25x + 15

1. Both 25 and 15 divide by 5.
2. Take the 5 outside the bracket.
3. So it factorises to 5(5x + 3).

Answer: **5(5x + 3)**

SUBSTITUTING INTO EXPRESSIONS

1. Work out the value of 2x + 2 when x = 8

1. 2x means 2 × 8 = 16.
2. Then add 2: 16 + 2 = 18.

Answer: **18**

2. Work out the value of 6x + 4 when x = 8

1. 6x means 6 × 8 = 48.
2. Then add 4: 48 + 4 = 52.

Answer: **52**

3. Work out the value of 2x + 11 when x = 11

1. 2x means 2 × 11 = 22.
2. Then add 11: 22 + 11 = 33.

Answer: **33**

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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.