EXPANDING TRIPLE BRACKETS

GRADE 6

Examination Practice Questions

You should have:

A ruler, protractor, compasses, a pen, pencil, eraser, calculator.
For some questions, you may need tracing paper.

Instructions

- Use **black** ink or ball-point pen.
- Answer the questions in the spaces provided – *there may be more space than you need.*
- **Calculators may be used.**

Information

- The marks for each question are shown in brackets.
- Use the number of marks for each question as a guide as to how much time to spend on each question. As a rough guide, you can multiply the number of marks by 1.2 to see how many minutes you should spend on a question.
- Questions been carefully compiled from or modelled on a variety of past papers and will generally get more challenging as the document progresses. Some of the later questions will go beyond the core grade level for this topic.

Advice

- Read each question carefully before you start to answer it.
- Don’t forget to have fun.
- Check your answers at the end.

Q1. AtoZrevision.com

Expand and simplify $2x(x-5)(x-3)$

.....

(3 marks)

Q2. AtoZrevision.com

Expand and simplify $(t+4)^3$

.....

(3 marks)

Q3. AtoZrevision.com

Expand $(x-2)^2(x+1)$. Simplify your answer.

.....

(3 marks)

Q4. AtoZrevision.com

Expand and fully simplify $(x + 1)(x - 1)(x + 2)$

.....

(3 marks)

Q5. AtoZrevision.com

Expand and fully simplify $(x - 5)(x + 2)(x + 5)$

.....

(3 marks)

Q6. AtoZrevision.com

By expanding the brackets, show that $(x - 4)(x - 3)(x + 1) = x^3 + ax^2 + bx + c$

where a, b and c are constants to be found.

.....

(3 marks)

Q7. AtoZrevision.com

Expand and simplify $(x + 4)(x - 2)(x + 1)$

.....

(3 marks)

Q8. AtoZrevision.com

Expand and simplify $(x + 1)^3 + 1$

.....

(3 marks)

Q9. AtoZrevision.com

Expand and simplify $(x + 5)(x - 3)(x + 3)$

.....

(3 marks)

Q10. AtoZrevision.com

Expand and simplify $(2x-1)(x+1)(x+2)-3(x-1)$

……

(3 marks)

Q11. AtoZrevision.com

Expand and simplify $(x-2)(2x+3)(x+1)$

……

(3 marks)

Q12. AtoZrevision.com

Expand and simplify the expression $(x+3)(x-4)(2x+5)$

……

(3 marks)

Q13. AtoZrevision.com

Expand and simplify $(x-3)(2x+3)(4x+5)$.

.....

(3 marks)

Q14. AtoZrevision.com

Expand and simplify $(2x-1)(x+3)(x-5)$

.....

(3 marks)

Q15. AtoZrevision.com

Expand and simplify $(x+2)(2x-3)(3x+1)$

.....

(3 marks)

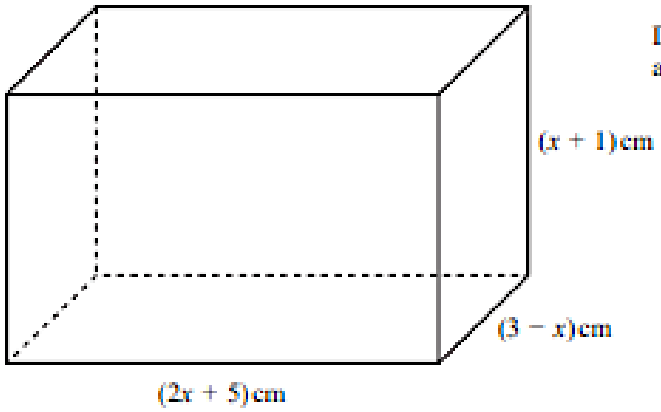
Q16. AtoZrevision.com

Expand and simplify $(4x + 1)(x - 3)(5x + 6)$

.....

(3 marks)

Q17. AtoZrevision.com



The diagram shows a cuboid of volume V cm ^{3}

By working out the values of a, b, c and d show that $V = a + bx + cx^2 + dx^3$

.....

(3 marks)

Q18. AtoZrevision.com

Expand and simplify the expression $(2x + 3)^3 - (6x - 1)^2$

.....

(5 marks)

Q19. AtoZrevision.com

The coefficient of x^2 in the expansion of $(x + 3)(x + k)(2x - 5)$ is -3. Find the value of the constant k.

.....

(3 marks)

Simplify fully the expression

$$\frac{(x+3)(x-4)(2x+5)-2x\left(x^2+2\right)-18}{x^2-13x}$$

.....

(4 marks)

QUESTIONS FROM MATHEMATICAL COMPETITIONS

Q1. AtoZrevision.com

The expression $x^2y + xy^2 + y^2z + yz^2 + z^2x + zx^2 - x^3 - y^3 - z^3 - 2xyz$ factorises as one of the expressions below. Tick the correct answer.

$(x + y + z)(x - y + z)(-x + y - z)$

$(x + y - z)(x - y + z)(-x + y + z)$

Q2. AtoZrevision.com

If x and n are integers then $(1 - x)^n(2 - x)^{2n}(3 - x)^{3n}(4 - x)^{4n}(5 - x)^{5n}$ satisfies one of the statements below. Tick the correct answer.

negative when $n > 5$ and $x < 5$

negative when n is odd and $x > 5$