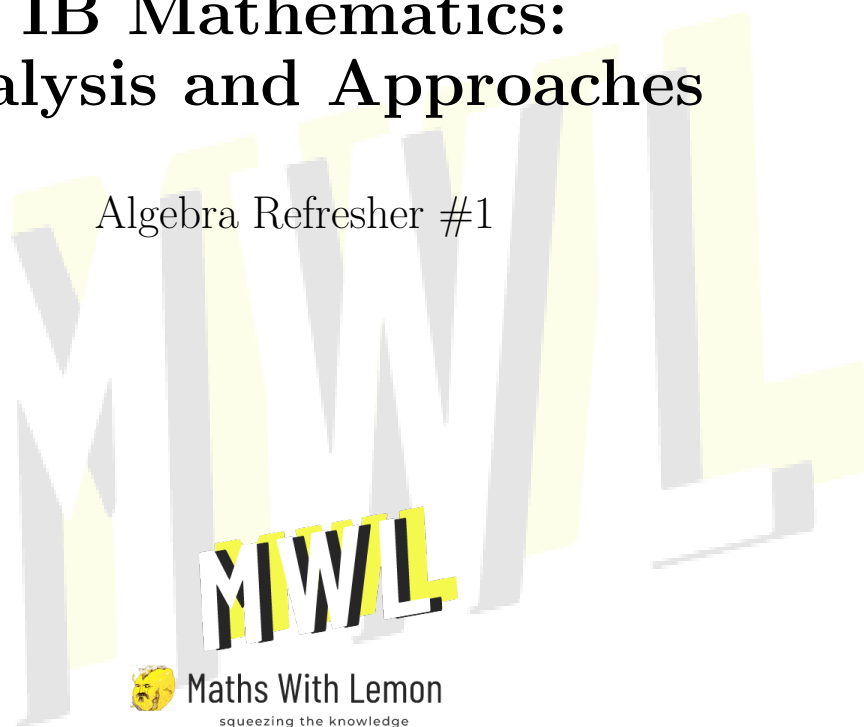


IB Mathematics: Analysis and Approaches

Algebra Refresher #1



Maths With Lemon

squeezing the knowledge

No Calculator Allowed

Name: _____

Instructions

Show all working clearly and completely. Answers without sufficient working may not receive full credit.

1. Expand:

$$(2x - 3)^2$$

2. Simplify:

$$\frac{3x}{4} + \frac{5}{6}$$

3. Simplify:

$$3\sqrt{48}$$

4. Expand:

$$(2m - 3)(m + 6)$$

5. Solve for x :

$$5 - 2(3 - x) = 2x - 5$$

6. Factorise:

$$2x^2 - 6x - 20$$

7. Simplify:

$$\frac{1}{a+6} + \frac{a}{a^2-8a}$$

8. Factorise:

$$4h^2 - 25$$

9. Solve for y :

$$\frac{3}{y} = \frac{2}{y-2}$$

10. Simplify:

$$(3a^2b)^3$$

11. Solve for x :

$$x^2 = -5x + 4$$

12. Expand:

$$(x - 2)^3$$

13. Simplify:

$$\frac{5a - 2}{2a - 6}$$

14. Simplify:

$$\frac{(3x - h)^2 - 9x^2}{h}$$

15. Simplify:

$$\frac{x}{y} - \frac{x}{z}$$

16. Simplify:

$$\frac{a}{b} + \frac{1}{b^3}$$

17. Factorise:

$$4n^3 - 26n^2 - 14n$$

18. Solve for w :

$$6w - 2wy = y + 3$$

19. Simplify:

$$\frac{x^2 + 2x + 1}{x + 1}$$

20. Simplify:

$$\frac{x^3 + y^3}{x^2y}$$

21. Simplify:

$$\frac{p^2 - 9}{p^2 - 3p}$$

22. Solve for a :

$$\frac{a - b}{b} = \frac{a}{4}$$

23. Solve for y :

$$\frac{x - y}{x} = x + 1$$

24. Solve for z :

$$z^3 - 8z^2 + 15z = 0$$

25. Solve for x :

$$x^3 - 12x = 0$$

Answers

1. $4x^2 - 12x + 9$

2. $\frac{9x + 10}{12}$

3. $12\sqrt{3}$

4. $2m^2 + 9m - 18$

5. $x = \frac{1}{2}$

6. $2(x - 5)(x + 2)$

7. $\frac{5a^2 - 8a}{2a^2 + 48 - 2a}$

8. $(2h + 5)(2h - 5)$

9. $y = \frac{6}{5}$

10. $27a^6b^3$

11. $x = -1, 4$

12. $x^3 - 6x^2 + 12x - 8$

13. $\frac{5a - 2}{2(a - 3)}$

14. $-6x + 3h$

15. $\frac{xz - xy}{yz}$

16. $\frac{ab^2 + 1}{b^3}$

17. $2n(2n + 1)(n - 7)$

18. $w = \frac{y + 3}{6 - 2y}$

19. $x + 1$

20. $\frac{y^3 + x^3}{x^2y}$

21. $\frac{p + 3}{p}$

22. $a = \frac{4b}{4 - b}$

23. $y = x - x(x + 1)$

24. $z = 0, 3, 5$

25. $x = 0, \pm\sqrt{12}$

MATHS



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