

Revision Booklet 4

Topics

1. Mean
2. Index Notation
3. Standard Form
4. Inequalities
5. Quadratic Functions

Name _____

1. Find the mean of 2, 3, 7 12 and 26

2. The mean of 6 numbers is 12. If five of these numbers are 8, 10, 11, 13.5 and 17, what is the sixth number?

3. The table below shows the data for vehicles passing a speed camera in a 40 mph limit area. Calculate the estimated mean for this data use sigma notation in the correct places on the table

Speed (s)	Frequency		
$10 \leq s < 20$	3		
$20 \leq s < 30$	12		
$30 \leq s < 40$	48		
$40 \leq s < 50$	11		
$50 \leq s < 60$	6		
	$\Sigma f =$		

4. Simplify $(3xy^3)^2$

5. Evaluate a) 64^0

b) $64^{1/3}$

6. Write using fractional index $\sqrt[3]{y^2}$

7. Write in standard index form

a) 130 000 000

b) 0.000023

8. Write as ordinary numbers

a) 2.5×10^5

b) 5.7×10^{-4}

9. Evaluate and give your answer in standard index form

a) $(1.2 \times 10^7) + (2.3 \times 10^5)$

b) $(6.7 \times 10^{-6}) + (4.3 \times 10^{-4})$

c) $(2.5 \times 10^4) - (2.3 \times 10^3)$

d) $(7.5 \times 10^{-3}) - (7.2 \times 10^{-4})$

10. Evaluate giving your answers in standard form

$$\frac{2.5 \times 10^6 \times 6 \times 10^{-4}}{5 \times 10^{-3}}$$

11. Write down the integers that satisfy the inequalities

a) $-4 \leq x < 3$

b) $-10 < 5x \leq 15$

c) $-11 < 3x < 13$

12. Solve the inequalities

a) $5x + 2 \leq 17$

b) $5x - 2 \geq 3x + 10$

c) $3x + 4 < 7x - 16$

d) $5x - 3 > 7x + 13$

13. Multiply out (Expand) the brackets on the following:

a. $3(x + 2)$

e. $(a + 2)(b + 3)$

b. $5(2y - 4)$

f. $(x - 3)(x + 4)$

c. $t(t + 3)$

g. $(x + 5)(x - 5)$

d. $2d(d - 5)$

h. $(3x + 5)(2x + 3)$

14. Factorise the following

a. $3x + 15$

e. $b^2 - 25$

b. $15y - 12$

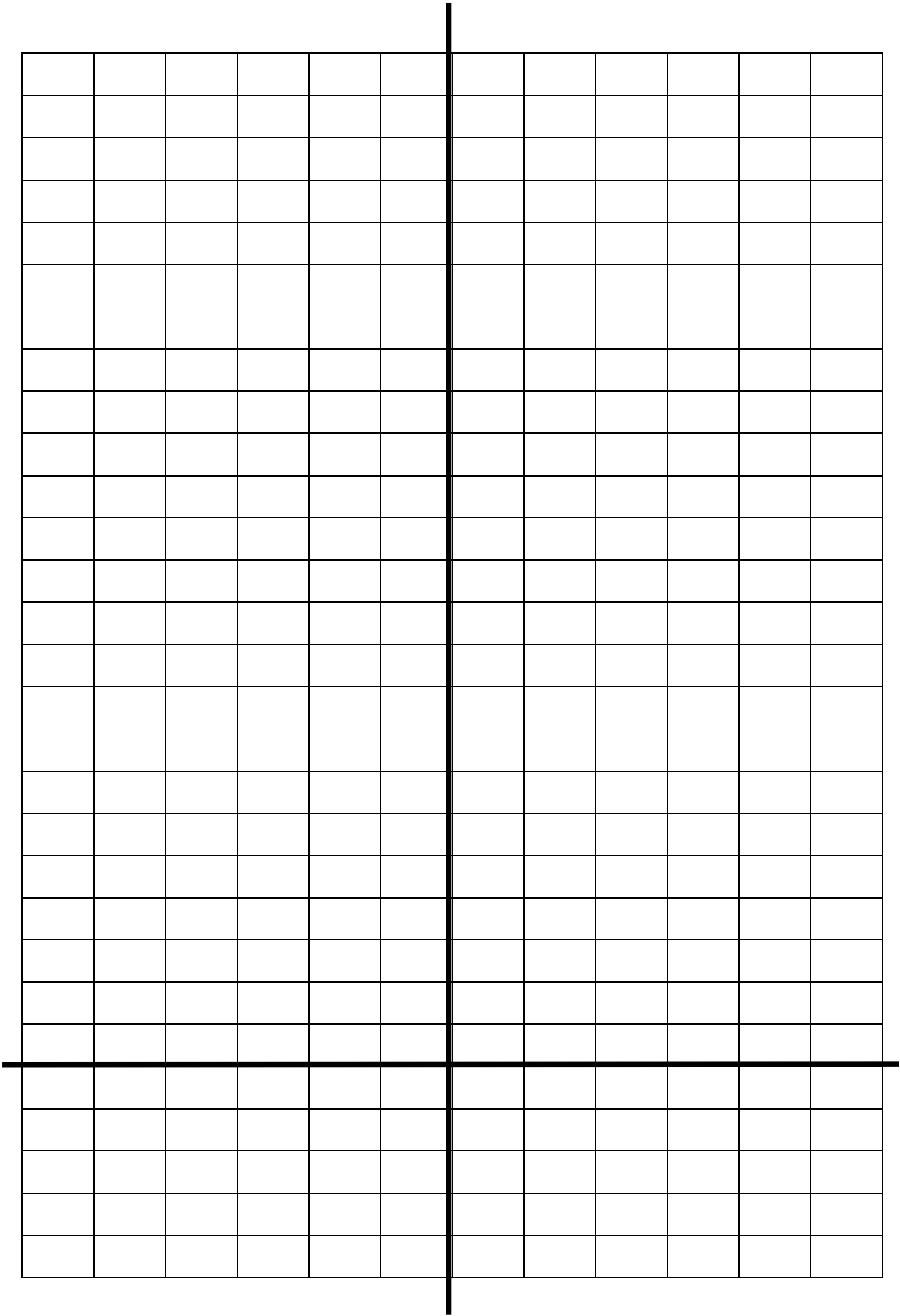
f. $x^2 + x - 6$

c. $t^2 + 5t$

g. $x^2 + 2x - 15$

d. $12d^2 - 6d$

h. $x^2 - 3x - 28$



14. Solve by factorising these quadratic equations

a.	$O = x^2 + 5x + 6$	g.	$O = x^2 + 2x + 1$
b.	$O = x^2 - x - 6$	h.	$O = x^2 - 2x + 1$
c.	$O = x^2 + 2x - 15$	i.	$O = x^2 + 6x - 16$
e.	$O = x^2 + x - 12$	j.	$O = x^2 + 3x - 70$
f.	$O = x^2 + 5x - 24$	k.	$O = x^2 + 5x - 36$

15. Simplify this fraction $\frac{x^2 - x - 6}{x^2 - 2x - 3}$

16. Solve these by completing the square

a.	$O = x^2 + 4x + 1$	g.	$O = x^2 + 4x - 1$
b.	$O = x^2 - 2x - 1$	h.	$O = x^2 - 2x - 3$
c.	$O = x^2 + 6x - 10$	i.	$O = x^2 + 8x + 16$
e.	$O = x^2 + 6x + 2$	j.	$O = x^2 + 10x - 5$
f.	$O = x^2 + 8x + 12$	k.	$O = x^2 - 8x - 12$

Notes on the Things that I Need to Remember