

Grade 8 Revision Session 5

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Grade 8
Revision S...

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Grade 8 Revision Session 5
on 4th August 2026



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inspired by the love of maths

Data Handling

1. The following were the marks (out of 20) obtained by 11 pupils in a geography test:

8; 9; 12; 12; 11; 16; 9; 7; 12; 12; 13

- a. Calculate the mean

(average = $\frac{\text{total}}{n}$) no. of marks

$$\frac{121}{11} = 11$$

- b. Give the mode

12

- c. Give the median

(middle mark) 12

7; 8; 9; 9; 11; 12; 12; 12; 12; 13; 16

$\frac{n+1}{2}$ 6th

2. Consider the marks (%) for a maths test given in a stem and leaf diagram:

10's ↓ ↓ units

4	9
5	1 5 6 7 8 9
6	0 2 2 4 4 5 6
7	0 1 6
8	0 4

- a. How many learners were there?

19

- b. What was the mode?

62 and 64

62 and 64,

c. What was the mean?

$$\frac{1209}{19} = 64\%$$

d. What was the median?

6

$$\frac{19+1}{2} = 10^{\text{th}}$$

$P(E) = \frac{\text{no. of ways it can happen}}{\text{total no. of outcomes}}$

Probability

$$P(H) = \frac{1}{2}$$

$$P(\text{even on dice}) = \frac{3}{6}$$

$$= \frac{1}{2} = 50\%$$

1. A jar contains 12 red beads, 5 green beads and 2 yellow beads.

I draw out a bead.

Give the probability that:

a. The bead is red $= \frac{12}{19} \approx 63\%$

b. The bead is not yellow $= \frac{17}{19}$

c. The bead is green or yellow $= \frac{7}{19}$

d. Suppose the bead is red and I remove it. I now draw out another bead. What is the probability that it is red too?

$$= \frac{11}{18}$$

Algebra

1. (a) Given the following expression: $10 + \frac{5x^2 - 3x}{6x} + 3x^4 - \frac{2x^5}{3} + 2x^3$

(1) How many terms are there in the expression?

5

(1) How many terms are there in the expression:

5

(2) What is the constant term?

↓ does n't change

(3) Write down the coefficient of x^5 the term.

$-\frac{2}{3}x^5$

$-\frac{2}{3}$

(b) If $a = -1$, $b = 2$ and $c = -4$, find the value of the following:

(1) abc

$= (-1)(2)(-4)$
 $= -2(-4) = 8$

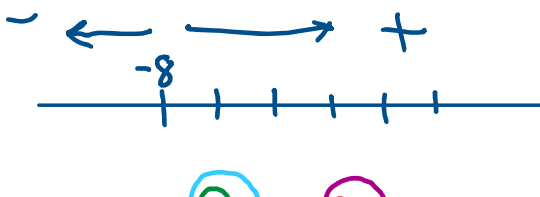
(2) $\frac{-2ac}{2^b}$

$= \frac{-2(-1)(-4)}{2^2} = \frac{2(-4)}{4} = \frac{-8}{4} = -2$

2. Simplify the following fully:

(a) $4x - 8y - 3x + 5y$

$= x - 3y$



$£5 + \$1$

$3\text{cm} + 10\text{mm}$

$R3 - \$2 - R1 + \4
 $R2 + \$2$



$$12 + 32$$

(b) $2x(x-3) + 3(x-2)$

$$= 2x^2 - 6x + 3x - 6$$
$$= 2x^2 - 3x - 6$$

$$2(-7) = 14$$
$$2(5+2) = 10 + 4 = 14$$

(c) $-4ab^2 \times 3a^2b^3$

$$= -4 \overset{\vee}{a} \overset{\vee}{b} \overset{\vee}{b} \cdot 3 \overset{\vee}{a} \overset{\vee}{a} \overset{\vee}{b} \overset{\vee}{b} \overset{\vee}{b}$$
$$= -4 \cdot 3 \cdot a \cdot a \cdot a \cdot b \cdot b \cdot b \cdot b \cdot b$$
$$= -12a^3b^5$$

$$\underline{-12a^3b^5}$$

(d) $3x^2 - 2xy - 5y^2 + 2xy - y^2$

$$= 3x^2 - 2xy + 2xy - 5y^2 - y^2$$
$$= 3x^2 - 6y^2$$

$$\begin{array}{c} - \quad \leftarrow \quad \rightarrow \quad + \\ -6 \quad -5 \\ \hline \end{array}$$

(e) $-5a^3b^2 \times 2a^4b^2$

$$= \underline{-10a^7b^4}$$

$$a^3 = a \times a \times a$$
$$a^4 = a \times a \times a \times a$$

(f) $2a \times -3b + 2ab \times 4$

$$= -6ab + 8ab$$
$$= 2ab \checkmark$$

$$\underline{+8ab - 6ab}$$
$$= 2ab$$

$$\begin{array}{c} \xrightarrow{0} \quad 2 \\ -6 \quad \quad \quad \hline \end{array}$$

(g) $3a(a-2b) + 9a \times b$

$$= 3a^2 - 6ab + 9ab$$
$$= 3a^2 + 3ab$$

$$+9ab - 6ab$$

3. Solve for x:

3:17



(a) $3x + 7 = -14$

$$3x = -21$$

$$1x = -\frac{21}{3}$$

$$x = -7$$

$$x + 7 = 10$$

$$x = 10 - 7$$

$$= 3$$

(b) $2 - (2x - 3) = 3(x + 1) - 1$

$$2 - 2x + 3 = 3x + 3 - 1$$

$$5 - 2x = 3x + 2$$

$$5 - 5x = 2$$

$$-5x = -3$$

$$x = \frac{3}{5}$$

$$5 = 5x + 2$$

$$3 = 5x$$

$$\frac{3}{5} = x$$

(27) $5x + 2 = 2x + 17$

$$3x + 2 = 17$$

$$3x = 15$$

$$x = 5$$

(c) $5 = \frac{x}{3} + 1$

$$15 = x + 3$$

$$12 = x$$

$$\frac{x}{13} \times \frac{13}{1} = x$$

(d) $\frac{3x - 5}{2} = -7$

$$3x - 5 = -14$$

$$3x = -9$$

$$x = -3$$

$$\frac{3(-3) - 5}{2}$$

$$= \frac{-9 - 5}{2}$$

(e) $2x - 6 = 4$

$$2x = 10$$

$$= \frac{-14}{2}$$

(e) $2x - 6 = 4$

$2x = 10$

$x = 5$ ✓

$\frac{11}{2}$ $\frac{19}{2}$

(f) $2 - 3x = 7 - x$

$2 = 7 - x + 3x$

$2 = 7 + 2x$

$= -\frac{14}{2}$

$= -7$

$-5 = 2x$

$-\frac{5}{2} = x$ ✓

(g) $\frac{x}{3} + 4 = 5$

$x + 12 = 15$

$x = 3$ ✓

(h) $4(x-1) - 3(x+2) = 0$

$4x - 4 - 3x - 6 = 0$

$x - 10 = 0$

(i) $2x = 3x$ $x = 10$ ✓

$0 = x$ ✓

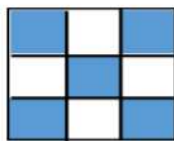
$4(10-1) - 3(10+2)$

$4(9) - 3(12)$

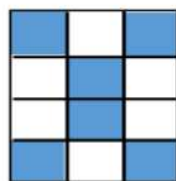
$36 - 36$

$= 0$

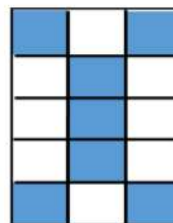
4. Consider the following 3 pictures of a pattern which continues:



Picture 1



Picture 2



Picture 3

(a) Complete the following table:

Picture	1	2	3	4	10	15
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- (a) Complete the following table:

Picture	1	2	3	4	10	15
No. of Shaded Tiles	5	6	7	8	14	19
No. of Unshaded Tiles	4	6	8	10	22	32
No. of Total Tiles	9	12	15	18	36	51

- (b) Give a rule or a formula describing number of Unshaded tiles in the n^{th} picture?

1 2 3 4
4; 6; 8; 10; ...
2 2 2

$$\text{Fig. no} \times 2 + 2$$

- (c) Which picture has a total of 78 tiles?

1 2 3 4
9; 12; 15; 18
3 3 3

$$\text{Total} = \text{Fig. no.} \times 3 + 6$$

$$T = 3f + 6$$

$$78 = 3f + 6$$

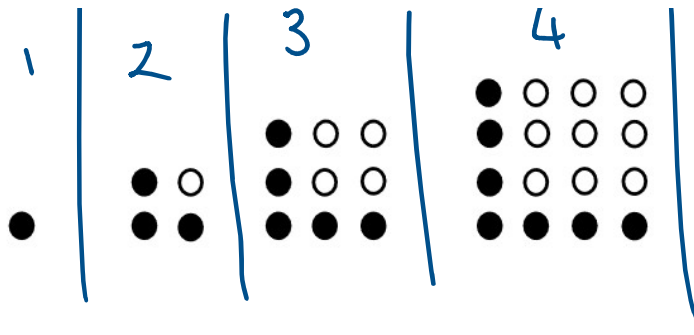
$$72 = 3f$$

$$24 = f$$

fig 20 $\rightarrow$ 66 tiles

5. The pattern below is made up of white and black dots in a square pattern. The black dots when considered on their own make a pattern of triangular numbers.

1 | 2 | 3 | 4
● ○ ○ ○



Complete the table below, including the general expression for pattern number n

Pattern no.	1	2	3	4	5	10	n
Number of black dots	1	3	5 ✓	7 ✓	9	$2(10)-1$ 19	$2n-1$
Total number of dots	1	4	9	16	25	100	n^2

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