

SHARP

Worksheet 30 Memorandum: Term 4 Revision

Grade 8 Mathematics

1. a) $6m + 3 = 2$

$$6m + 3 - 3 = 2 - 3$$
$$6m = -1$$
$$6m \div 6 = -1 \div 6$$
$$m = -\frac{1}{6}$$

b) $-7n - 8 = 0$

$$-7n - 8 + 8 = 0 + 8$$
$$-7n = 8$$
$$-7n \div -7 = 8 \div -7$$
$$n = -\frac{8}{7}$$

c) $\frac{p}{2} - 8 = 4$

$$\frac{p}{2} - 8 + 8 = 4 + 8$$
$$\frac{p}{2} = 12$$
$$\frac{p}{2} \times 2 = 12 \times 2$$
$$p = 24$$

d) $\frac{3}{2}q - 3 = 3$

$$\frac{3}{2}q - 3 + 3 = 3 + 3$$
$$\frac{3}{2}q = 6$$
$$\frac{3}{2}q \times \frac{2}{3} = 6 \times \frac{2}{3}$$
$$q = 4$$

e) $10 - 7r = 3$

$$10 - 7r - 10 = 3 - 10$$
$$-7r = -7$$
$$-7r \div -7 = -7 \div -7$$
$$r = 1$$

f) $9s - \frac{1}{2} = \frac{3}{4}$

$$9s - \frac{1}{2} + \frac{1}{2} = \frac{3}{4} + \frac{1}{2}$$
$$9s = \frac{5}{4}$$
$$9s \div 9 = \frac{5}{4} \div 9$$
$$s = \frac{5}{36}$$



g) $8 - \frac{t}{6} = -1$

$$8 - \frac{t}{6} - 8 = -1 - 8$$

$$-\frac{t}{6} = -9$$

$$-\frac{t}{6} \times -6 = -9 \times -6$$

$$t = 54$$

h) $-7 + 4u = -35$

$$-7 + 4u + 7 = -35 + 7$$

$$4u = -28$$

$$4u \div 4 = -28 \div 4$$

$$u = -7$$

i) $11 + v = 7$

$$11 + v - 11 = 7 - 11$$

$$v = -4$$

j) $\frac{4w}{7} - 3 = 5$

$$\frac{4w}{7} - 3 + 3 = 5 + 3$$

$$\frac{4w}{7} \times 7 = 8 \times 7$$

$$4w \div 4 = 56 \div 4$$

$$w = 14$$

2. a) complete: $y = 2x - 3$

x	-2	-1	0	1	2	6	10	13	19
y	-7	-5	-3	-1	1	9	17	23	35

b) complete: $y = \frac{3}{7}x + 7$

x	-2	-1	0	1	2	5	7	11	15
y	$6\frac{1}{7}$	$6\frac{4}{7}$	7	$7\frac{3}{7}$	$7\frac{6}{7}$	$9\frac{1}{7}$	10	$11\frac{5}{7}$	$13\frac{3}{7}$

c) complete: $y = -3x + 10$

x	-2	-1	0	1	2	4	7	10	17
y	16	13	10	7	4	-2	-11	-20	-41

d) complete: $y = 2^x$

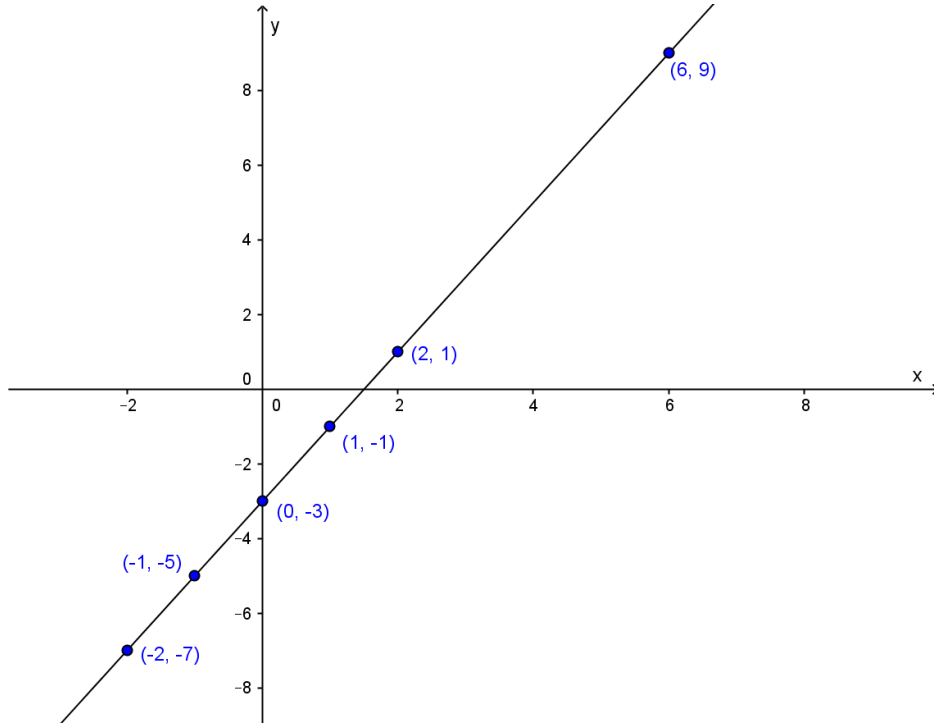
x	0	1	2	3	4	7	9	13	15
y	1	2	4	8	16	128	512	8 192	32 768



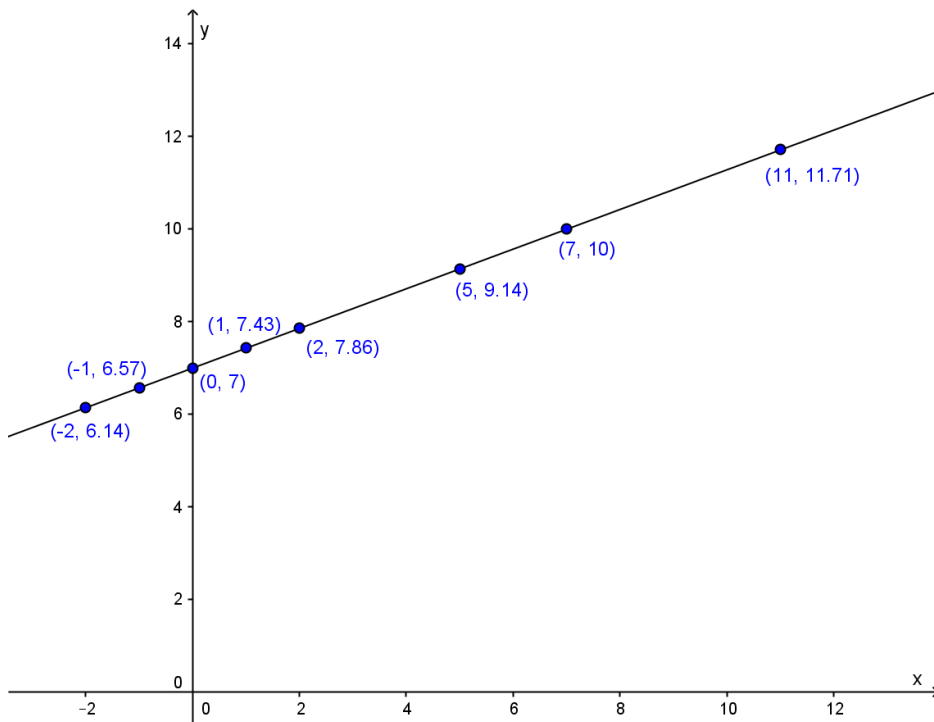
e) complete: $y = 48 \div x$

x	1	2	3	4	6	8	12	16	24
y	48	24	16	12	8	6	4	3	2

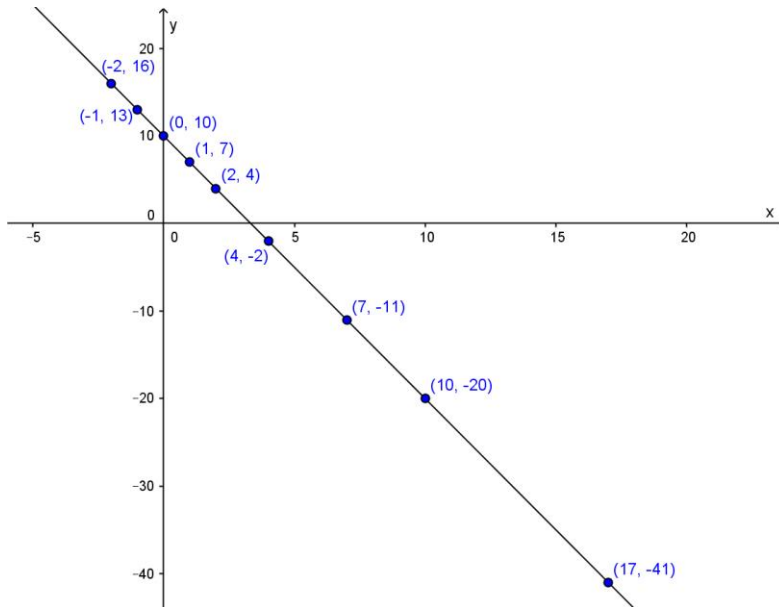
3. a)



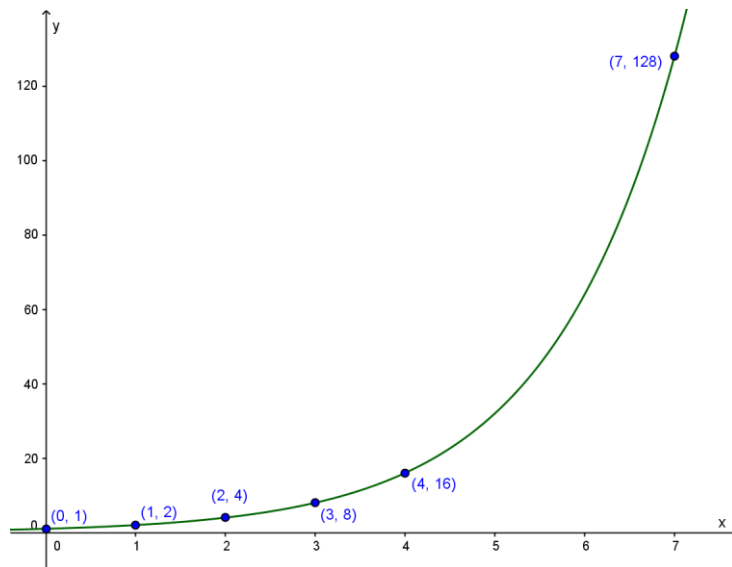
b)



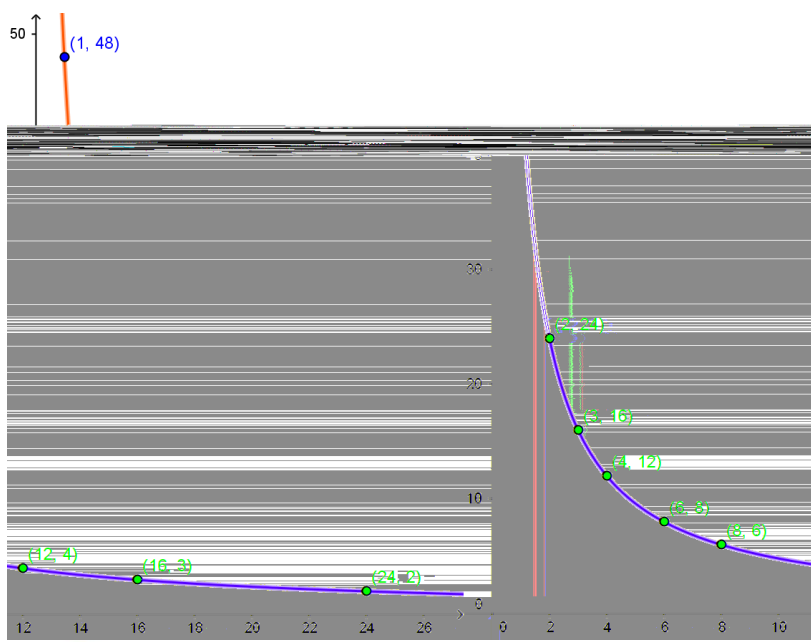
c)



d)

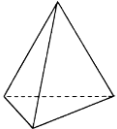
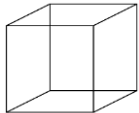
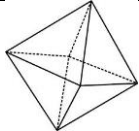
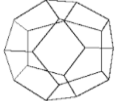
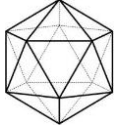

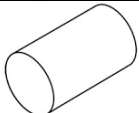


e)

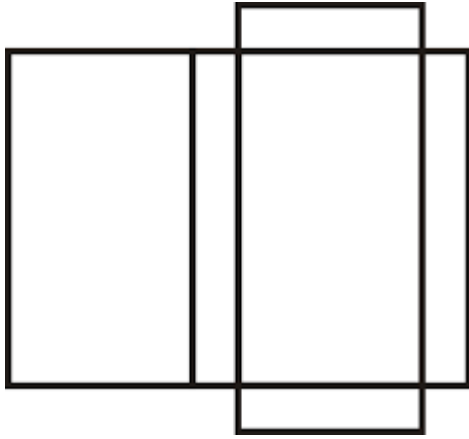


8. A (-9; 8) → A' (-6; 6) = Translation down two units and right 3 units
 B (7; 7) → B' (-7, 7) = Reflection about the y-axis
 C (-4; 3) → C' (-4; -3) = Reflection about the x-axis
 D (-1; -1), E (-1; -3) and F (4,1) → D' (-2; -2), E' (-2; -6) and F' (8, -2)
 = Enlargement by factor 2.
 G (6; 1) → G' (1; -6) = Rotation of 90° clockwise.

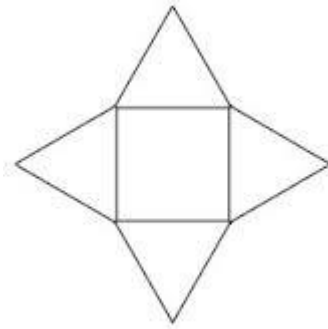
9. Redraw the following table in your book and complete it by filling in the missing values:

Picture	Name of Shape	Number of Faces	Number of Edges	Number of Vertices
	Tetrahedron or equilateral triangle pyramid	4	6	4
	Hexahedron or cube	6	12	8
	Octahedron	8	12	6
	dodecahedron	12	30	20
	Icosahedron	20	30	12
	Sphere	1	0	0
	Cylinder	3	2	0

10. a)



b)



Please note that a rectangular prism can be drawn in many different ways. What is critical is that the prism has 3 sets of identical rectangles and that the net can be folded up to form a rectangular prism.

11. Give the names of the following 3D shapes from the pictures of their nets.

- | | |
|----------------|---------------------|
| a) cone | b) pentagonal prism |
| c) icosahedron | d) triangular prism |

12. a)

Die/ coin	1	2	3	4	5	6
Heads	H & 1	H & 2	H & 3	H & 4	H & 5	H & 6
Tails	T & 1	T & 2	T & 3	T & 4	T & 5	T & 6

- b) Chance of rolling a 6 and heads = $\frac{1}{12}$
- c) Chance of rolling an odd number on the die and getting tails = $\frac{3}{12}$ or $\frac{1}{4}$
- d) Chance of rolling a seven and getting heads = 0

13. a)

Die/ coin	1	2	3	4	5	6
Heads & Heads	HH & 1	HH & 2	HH & 3	HH & 4	HH & 5	HH & 6
Heads & Tails	HT & 1	HT & 2	HT & 3	HT & 4	HT & 5	HT & 6
Tails & Heads	TH & 1	TH & 2	TH & 3	TH & 4	TH & 5	TH & 6
Tails & Tails	TT & 1	TT & 2	TT & 3	TT & 4	TT & 5	TT & 6

b) Yes it is, but the chances of this happening are very small.

c) Probability of getting a 5 and one heads and one tails = $\frac{2}{24}$ or $\frac{1}{12}$

d) Probability of rolling an even number and getting two heads = $\frac{3}{24}$ or $\frac{1}{8}$

e) The chances of getting a 3 and two tails are = $\frac{1}{24}$ while the chances of getting an odd number and one heads and one tails are = $\frac{6}{24}$ or $\frac{1}{4}$ so I would choose the second option as my chances of winning are much higher.

14. a) 1, 2, 3, 4, 5, 6, 7, 8

b)

	1	2	3	4	5	6	7	8
1	1,1	2,1	3,1	4,1	5,1	6,1	7,1	8,1
2	1,2	2,2	3,2	4,2	5,2	6,2	7,2	8,2
3	1,3	2,3	3,3	4,3	5,3	6,3	7,3	8,3
4	1,4	2,4	3,4	4,4	5,4	6,4	7,4	8,4
5	1,5	2,5	3,5	4,5	5,5	6,5	7,5	8,5
6	1,6	2,6	3,6	4,6	5,6	6,6	7,6	8,6
7	1,7	2,7	3,7	4,7	5,7	6,7	7,7	8,7
8	1,8	2,8	3,8	4,8	5,8	6,8	7,8	8,8

c) Chance of getting an even number if the spinner is spun once = $\frac{4}{8}$ or $\frac{1}{2}$

d) Chance of getting an odd number if the spinner is spun twice = $\frac{48}{64}$ or $\frac{3}{4}$

e) Chance of getting the same two numbers in a row = $\frac{8}{64}$ or $\frac{1}{8}$

