LSB

Grade 8 Math Final Exam – June 2012 – Answer Key

Section 1: Non-Calculator

1.	A
2.	B
3.	D
4.	B
5.	D

6.	B
7.	D
8.	B
9.	C
10.	C

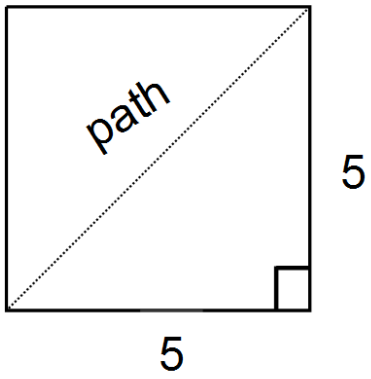
Section 2: Calculator

11.	B
12.	C
13.	A
14.	C
15.	D
16.	A
17.	C
18.	D
19.	A
20.	C

21.	C
22.	D
23.	C
24.	C
25.	B
26.	C
27.	B
28	A
29.	C
30.	C

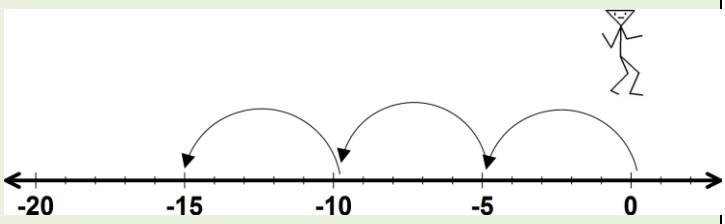
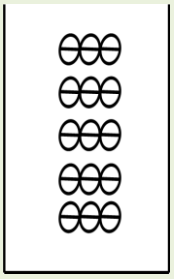
31.	A
32.	C
33.	C
34.	B
35.	B
36.	A
37.	A
38.	D
39.	D
40.	A

1. What is the length of the diagonal path, to the nearest tenth? Explain your answer. [3 Marks]



Marks	
	$C^2 = A^2 + B^2$
	$C^2 = 5^2 + 5^2$
1	$C^2 = 25 + 25$
	$\sqrt{C^2} = \sqrt{50}$
1	$C = \sqrt{50}$
	Students responses will vary however should include, • $\sqrt{49} = 7$ • $\sqrt{64} = 8$ • $\sqrt{50} \sim 7.1$
1	• **$\sqrt{50}$ is really close to $\sqrt{49}$ so it has to be really close to 7**

2. Calculate $(+3) \times (-5)$ by sketching a model of your choice (i.e. counters, number line, etc.). [2 Marks]

Marks	
1 for model	One possible answer: 3 groups of -5 which is -15 
1 for stating -15	Another possible answer: Three groups of -5 which is -15 

3. Janet has **two** pieces of ribbon that are each $6\frac{1}{4}$ m long. She needs to cut each piece into smaller lengths of $\frac{3}{4}$ m. She thinks she will get 18 pieces of the appropriate length. Do you agree or disagree? Explain your answer.

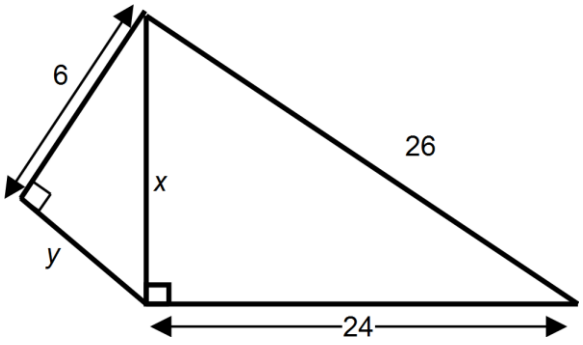
[3 Marks]

Marks	Methods may vary. **One possible method of solving:**
0.5	$6\frac{1}{4} \div \frac{3}{4}$
	$= \frac{25}{4} \div \frac{3}{4}$
0.5	$= \frac{25}{4} \times \frac{4}{3}$
0.5	$= \frac{25}{3}$
0.5	$= 8\frac{1}{3}$
1	Since she has two such pieces, she will get 16 pieces of appropriate length not 18 (she'll have two smaller pieces left over).

4. Solve: $-3(n+2)=15$ [2 Marks]

Marks	
	$\boldsymbol{-3(n+2)=15}$
0.5	$\boldsymbol{-3n-6=15}$
0.5	$\boldsymbol{-3n-6+6=15+6}$
0.5	$\boldsymbol{\frac{-3n}{-3}=\frac{21}{-3}}$
0.5	$\boldsymbol{n=-7}$

5. Determine the value of x. [3 Marks]



Marks	
1.5 marks for each piece shown	$x^2 + y^2 = z^2$ $24^2 + x^2 = 26^2$ $576 + x^2 = 676$ $x^2 = 100 \Rightarrow x = 10$ $6^2 + y^2 = 10^2$ $36 + y^2 = 100$ $y^2 = 64$ $\Rightarrow y = 8$

6. Evaluate: $\frac{2}{3} + 1\frac{1}{3} \div \frac{5}{6}$ [3 Marks]

Marks	
	$\frac{2}{3} + 1\frac{1}{3} \div \frac{5}{6}$
0.5	$= \frac{2}{3} + \frac{4}{3} \div \frac{5}{6}$
0.5	$= \frac{2}{3} + \frac{4}{3} \times \frac{6}{5}$
1	$= \frac{2}{3} + \frac{24}{15}$
	$= \frac{2 \times 5}{3 \times 5} + \frac{24}{15}$
0.5	$= \frac{10}{15} + \frac{24}{15}$
0.5	$= \frac{34}{15} = 2\frac{4}{15}$

7. An aquarium has the dimensions 30 cm × 25 cm × 25 cm. The water is 8 cm from the top. What volume of water, in cm^3, is in the aquarium? [3 Marks]

Marks	
	This is one possible method to determine the solution,
	$Volume\ (V) = length(l) \times width(w) \times height(h)$
	$V = l \times w \times h$
1	$V_{water} = 30\text{cm} \times 25\text{cm} \times 17\text{cm}$
2	$V_{water} = 12\ 750\text{cm}^3$

30 cm

8. Find the surface area of a cylinder with a diameter of 30 cm and the height of 20 cm. [3 Marks]

Marks	
	$Surface\ Area_{cylinder} = 2\pi r^2 + 2\pi rh$
0.5	$SA = 2\pi(15)^2 + 2\pi(15)(20)$
0.5	$SA = 2\pi(225) + 2\pi(15)(20)$
1	$SA = 1413 + 1884$
1	$SA = 3297\text{cm}^2$
	OR
	$Surface\ Area_{cylinder} = 2\pi r^2 + \pi dh$
0.5	$SA = 2\pi(15)^2 + \pi(30)(20)$
0.5	$SA = 2\pi(225) + \pi(30)(20)$
1	$SA = 1413 + 1884$
1	$SA = 3297\text{cm}^2$

9. Alyssa bought a Blue Ray Disc on sale for $34.00 which was 85% of the regular price.

(A) What was the regular price of the disc? [3 Mark]

Marks	
1	$\frac{34}{85} = 0.4$
	So, 1% of the number is 0.4 and 100% of the number is :
0.5	$0.4 \times 100 = 40$
	Therefore the original price of the Blue Ray Disc was $40.00

(B) What did she pay, including 13% sales tax?

Marks	
	$Taxes = \$34.00 \times HST$
0.5	$Taxes = \$34.00 \times 0.13$
0.5	$Taxes = \$4.42$
0.5	$Total\ Amount = \$34 + \$4.42 = \$38.42$
	Alyson paid $4.42 in taxes on the Blue Ray Disc

10. In two stores, the same detergent is on special. Which is the better buy? Explain. [3 Mark]

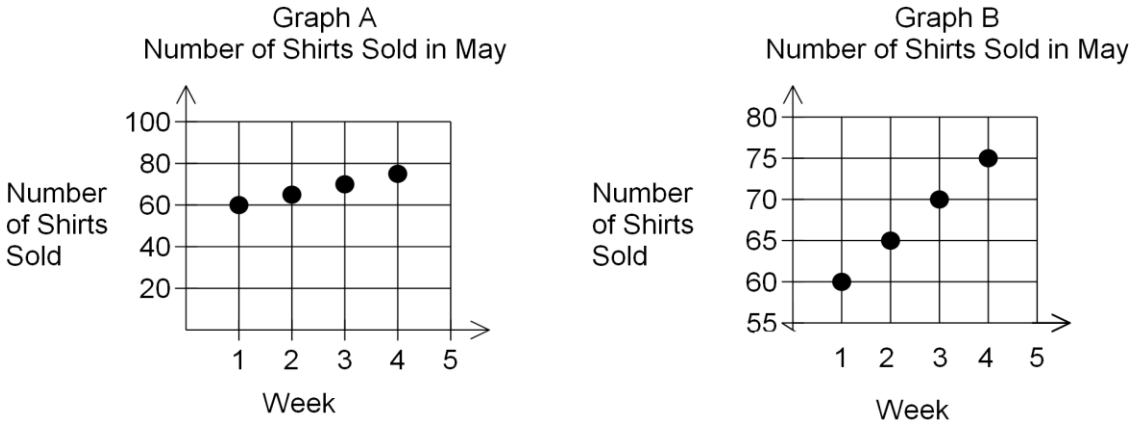
(A) 6 bottles for $12.48 (B) 7 bottles for $14.42

Marks	Situation A	Situation B
1 for each calculation	$\frac{12.48}{6} = 2.08$	$\frac{14.42}{7} = 2.06$
1 for statement of better buy		The better buy would be situation B 7 bottles for $14.42 because each bottle would cost $2.06.

11. A bookstore has 12 Math books and 15 Science books. If 6 Math books are sold, what is the new ratio in lowest terms, of math books to the total books. [2 Marks]

Marks	Math books : Total books
0.5	6:(15+6)
0.5	6:21
1	2:7

12. The two line graphs show sales of T-shirts at The Tee Shop for May.



Which graph could be misleading? Explain. (2 Marks)

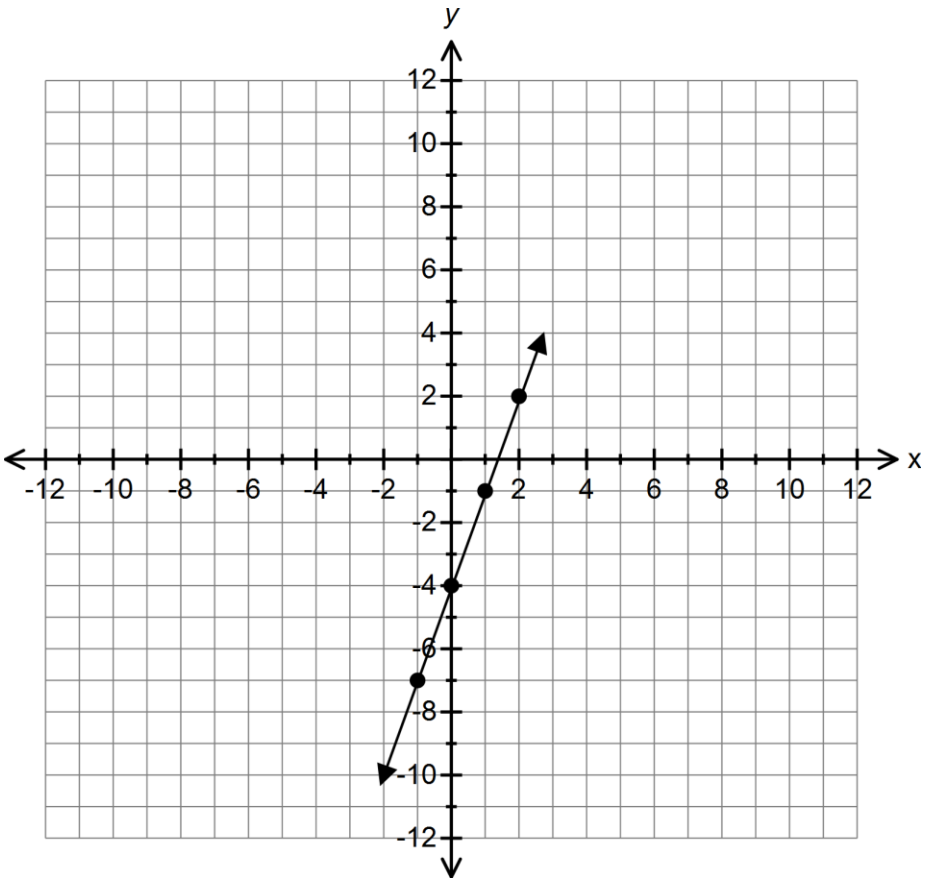
Marks	
2	Graph B could be misleading because the vertical axis does not begin at zero (the scales on the y-axes are different). i.e. Graph B seems to indicate a "bigger" increase over the weeks than does Graph A.

13. The equation of a linear relation is: $y = 3x - 4$

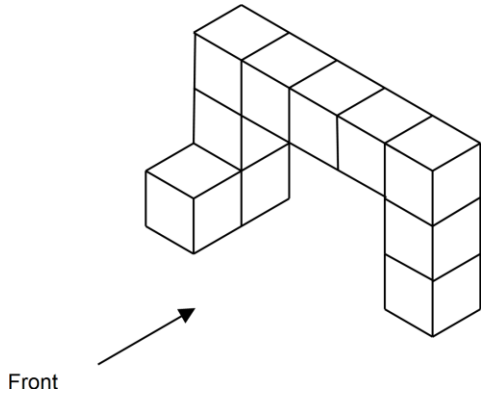
A. Complete this table of values for the relation. [1Mark]

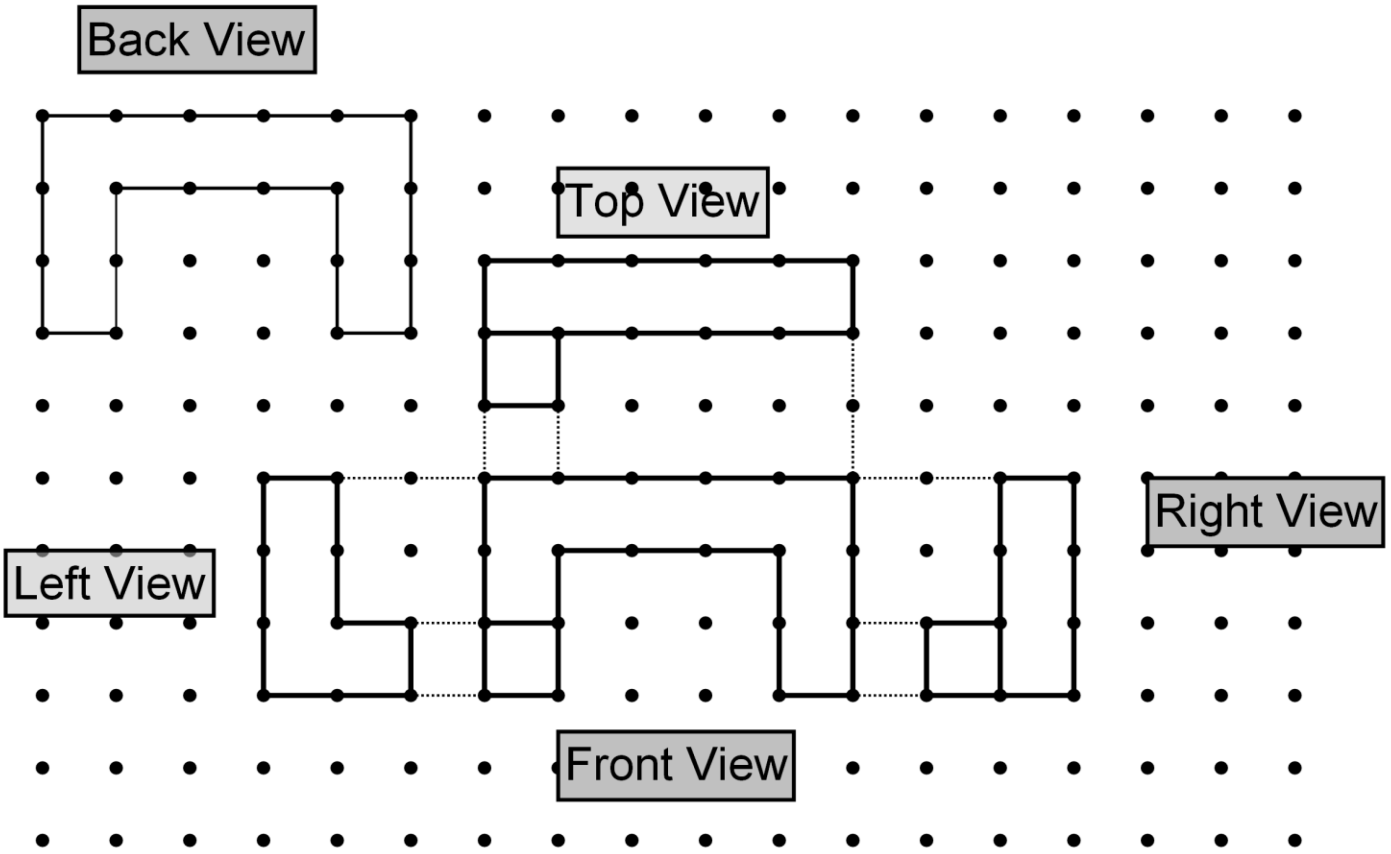
x	y
-1	-7
0	-4
1	-1
2	2

B. Graph the data from the table in part A on the grid below. [1 Mark]



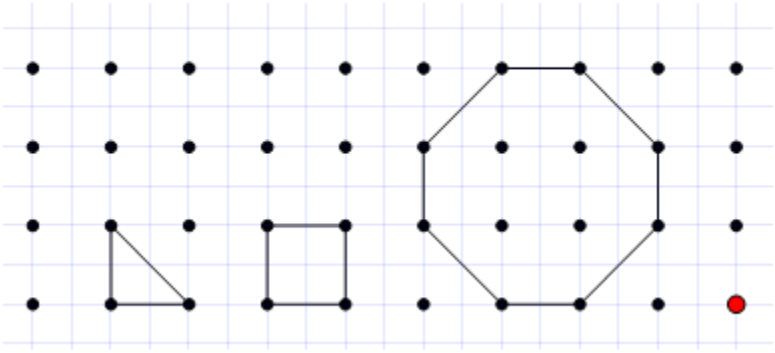
14. Draw and label any <u>three</u> views of this object? (Level 2 – 8SS5) [3 Marks]





Marks
1 for each view

15. Use **ALL** three objects to create a tessellation on the grid below. Repeat your tessellation at least twice. [3 marks]



Solutions will vary