

Name:	School:	Target Grade:
-------	---------	---------------



**SECONDARY 1 WA2
MOCK EXAM PAPER**

READ THESE INSTRUCTIONS FIRST

INSTRUCTIONS TO CANDIDATES

1. Find a nice comfortable spot without distraction.
2. Be fully focused for the whole duration of the test.
3. Speed is KING. Finish the paper as soon as possible then return-back to Check Your Answers.
4. As you are checking your answers, always find ways to VALIDATE your answer.
5. Avoid looking through line by line as usually you will not be able to see your Blind Spot.
6. If there is no alternative method, cover your answer and REDO the question.
7. Give non-exact answers to 3 significant figures, or 1 decimal place for angles in degree, or 2 decimal place for \$\$\$, unless a different level of accuracy is specified in the question.

Wish you guys all the best in this test.

You can do it.

I believe in you.

Team Paradigm

If you are struggling in this paper, it's an indication to work harder!
If you need support and personalised guidance, you can find us here
www.mathstutor.com.sg



PARADIGM

[Turn Over]

Name: _____

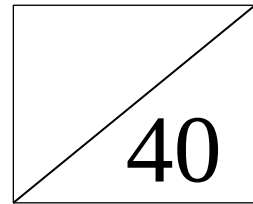
Class: _____

Date: _____

**Secondary 1 Mathematics
WA2 Mock Paper**

Topic:

Duration: 1 hour


Estimation & Approximation

1	(a) Round off 3025.378 to (i) 2 decimal places, (ii) 2 significant figures. (b) Round off 0.03288345 to 3 significant figures. (c) Without the use of calculator, estimate the value of (i) $\frac{\sqrt[3]{999}}{9.8} \times 5.01$, (ii) $\frac{\sqrt{65}}{\sqrt[3]{9}} \times 19.9$.	[1] [1] [1] [1] [1]
2	Use a calculator to evaluate $\frac{3(\sqrt{2020}-3.14^3)}{500(\sqrt[3]{65})}$ correct to (a) 4 significant figures. (b) 3 decimal places.	[1] [1]
3	(a) By rounding the numbers to 1 significant figure, estimate the value of $\frac{\sqrt{101.3} \times 64.231}{(1.98)^3}$. Show your working clearly. (b) Without using the calculator, determine whether the value found in (a) is an over or under estimation. Give a reason for your answer.	[2] [1]

Algebra

1	Simplify the following. (a) $5(x + 3y) + 3(4x - 2y)$, (b) $\frac{2p-3q}{5} - \frac{3p-5q}{4}$.	[2] [2]
2	Solve the following equations. (a) $\frac{2x}{3} = -54$, (b) $6(x - 1) - 2(x + 2) = 12$.	[2] [2]
3	(a) $w = \frac{1}{3}(a^2 + b)$. Find the value of w if $a = -2$ and $b = 3$. (b) Solve $\frac{32}{x-3} = 8$.	[2] [2]
4	Simplify the following expressions. $4 - 3[2 - (3 - 2y)]$	[2]
5	Factorise the following expressions completely. (a) $25mp - 40mm$ (b) $-18ax + 24ay - 6a$ (c) $5u(2v - 3) - 2(6v - 9)$	[1] [1] [2]
6	Write an algebraic expression, in its simplest form, for each of the following statements. (a) Divide $2t$ by $4v$. (b) Add 15 to the product of h and m. (c) Subtract $3c + 2$ from the sum of $2c$ and 3.	[1] [1] [1]

Algebra (Word Problem)

1	A ticket for an adult visiting the Universal Studios costs p dollars. A ticket for a child costs \$8 less than an adult's ticket. (a) Write an expression in terms of p for the cost of a child's ticket. (b) (i) Jason bought 2 adult tickets and 4 child tickets. Write down and simplify an expression, in terms of p, for the cost of the 6 tickets. (ii) If the price of an adult ticket is \$50, find the total cost Jason has to pay for the 6 tickets.	[1] [2] [2]
2	Mary is x years old and James is 8 years older than her. Their mother is 3 times as old as Mary and their father is twice as old as James. (a) Write down expressions, in terms of x, for (i) Jame's age, (ii) their father's age (b) Given that the sum of the ages of the four members of the family is 129, find Mary's age.	[1] [1] [2]

Answer Key

Estimation & Approximation

1	(a) Round off 3025.378 to (i) 2 decimal places, (ii) 2 significant figures. (b) Round off 0.03288345 to 3 significant figures. (c) Without the use of calculator, estimate the value of (i) $\frac{\sqrt[3]{999}}{9.8} \times 5.01$, (ii) $\frac{\sqrt{65}}{\sqrt[3]{9}} \times 19.9$. Solutions: (c)(i) $\frac{\sqrt[3]{999}}{9.8} \times 5.01$ (ii) $\frac{\sqrt{65}}{\sqrt[3]{9}} \times 19.9$ $\approx \frac{\sqrt[3]{1000}}{10} \times 5$ $\approx \frac{\sqrt{64}}{\sqrt[3]{8}} \times 20$ $= \frac{10}{10} \times 5$ $= \frac{8}{2} \times 20$ $= 5$ $= 80$ Ans: (ai) 3025.38(2d.p) (aii) 3000 (2s.f) (b) 0.0329 (2s.f) (ci) 5 (cii) 80	
2	Use a calculator to evaluate $\frac{3(\sqrt{2020}-3.14^3)}{500(\sqrt[3]{65})}$ correct to (c) 4 significant figures. (d) 3 decimal places. Ans: (a) 0.02087, (b) 0.021	
3	(a) By rounding the numbers to 1 significant figure, estimate the value of $\frac{\sqrt{101.3} \times 64.231}{(1.98)^3}$. Show your working clearly. (b) Without using the calculator, determine whether the value found in (a) is an over or under estimation. Give a reason for your answer. Solution: (a) $\frac{\sqrt{101.3} \times 64.231}{(1.98)^3} = \frac{10 \times 60}{8}$ $= 75$ Ans: (a) 75, (b) Underestimate. The numbers in the numerator have been rounded down and the number in the denominator has been rounded up, making the final answer smaller than the actual value.	

Algebra

1	Simplify the following. (a) $5(x + 3y) + 3(4x - 2y)$, (b) $\frac{2p-3q}{5} - \frac{3p-5q}{4}$. Solutions: (a) $5x + 15y + 12x - 6y$ $= 17x + 9y$ (b) $\frac{4(2p-3q)-5(3p-5q)}{20}$ $= \frac{8p-12q-15p+25q}{20}$ $= \frac{-7p+13q}{20}$ Ans: (a) $17x + 9y$ (b) $\frac{-7p+13q}{20}$	
2	Solve the following equations. (a) $\frac{2x}{3} = -54$, (b) $6(x - 1) - 2(x + 2) = 12$. Solutions: (a) $\frac{2x}{3} = -54$, $2x = -162$ $x = -81$ (b) $6(x - 1) - 2(x + 2) = 12$, $6x - 6 - 2x - 4 = 12$ $4x - 10 = 12$ $4x = 22$ $x = 5\frac{1}{2} / 5.5$ Ans: (a) $x = -81$ (b) $x = 5.5 / 5\frac{1}{2}$	
3	Solutions: (a) $w = \frac{1}{3}[(-2)^2 + 3]$ $= \frac{7}{3}$ (b) $32 = 8(x - 3)$ $32 = 8x - 24$ $8x = 56$ $x = 7$ Ans: (a) $w = \frac{7}{3}$, (b) $x = 7$	
4	Solution: $4 - 3[2 - 3 + 2y]$ $= 4 - 3(2y - 1)$ $= 4 - 6y + 3$ $= 7 - 6y$ Ans: $7 - 6y$	
5	Solutions:	

	(c) $5u(2v - 3) - 6(2v - 3)$ $= (5u - 6)(2v - 3)$ Ans: (a) $5m(5p - 8n)$ (b) $6a(-3x + 4y - 1)$ (c) $(5u - 6)(2v - 3)$	
6	Ans: (a) $\frac{t}{2v}$, (b) $hm + 15$, (c) $-c + 1$	

Algebra (Word Problem)

1	Solutions: (b)(i) $2p + 4(p - 8)$ (b)(ii) Total cost $= 2p + 4p - 32$ $= 6(50) - 32$ $= \$(6p - 32)$ $= \$268$ Ans: (a) $\$(p - 8)$ (bi) $\$(6p - 32)$ (bii) \$268	
2	Solutions: (a)(ii) $2(x + 8) = 2x + 16$ years old (b) $x + x + 8 + 3x + 2x + 16 = 129$ $7x + 24 = 129$ $x = 15$ Ans: (a) $(x + 8)$ years old (aii) $2x + 16$ years old (b) Mary's age is 15 years old.	