Mathematics
YEAR 7 -8

Calculators may be used.
Attempt ALL questions.

Show all necessary working.
Total Marks: **Time:** 1hour

1. Round 3756.348
   a) to 2 decimal places   b) to the nearest 100.

   a)   b)

2. List the even multiples of 3 less than 20.

3. Find the highest common factor of 8 and 20.

4. Express 72 as a product of its prime factors.
   Give the answer in index notation.
   You may use a factor tree.

5. Evaluate   i) $3 \div 1\frac{1}{2}$ ii) $3\frac{1}{3} - 1\frac{1}{4}$

6. Write $1\frac{2}{5}$ as an improper fraction.

7. Which is larger $0 \cdot 440$ or $0 \cdot 404$?

8. Evaluate $4 \cdot 36 + 1 \cdot 7$

9. Evaluate   i) $(8 + 4) \div 4 \times 3$

    ii) $(8 + 4 \div 4) \times 3$

10. Write 0.27 as a fraction.

11. Write 0.325 as a percentage.

12. Which is the smallest number $0 \cdot 3$ or $\dfrac{3}{10}$?   Show working.

13. Evaluate $5^2 \times 2^3$

14. Write down the next three numbers in the sequence

    0, 11, 23, 36, 50, _____, _____, _____,

15. Evaluate 16% of $60

16. Express $3 \cdot 2 \times 10^3$ as an ordinary number.

17. Calculate $(2 \cdot 17)^3$ correct to 2 decimal places.

18. Calculate the average of $17, $21 and $16.

19. Express 68241 in standard form. (i.e. in the form $6 \cdot 8241 \times 10^P$).

20. A car salesman sells a vehicle for $22 500 and receives a commission of 4%. How much does he earn?

21. Express $35 as a percentage of $120 ?

22. Find the loss, as a percentage of the cost price, when the selling price of an article is $345 and the cost price is $360.

23. Find the simple interest on $3700 for 3 years at 11% per annum.

24. What number is 6 less than -2 (negative two) ?

25. Complete all the calculations of this compound interest problem in the third column showing all working.

A sum of $5000 is invested at 12% p.a. compound interest for 3 years. Find the total value of the investment at the end of 3 years, giving your answer to the nearest cent.

FIRST YEAR	PRINCIPAL	$5 000
	INTEREST	12% of $5 000 =
SECOND YEAR	PRINCIPAL (Balance)	
	INTEREST	
THIRD YEAR	PRINCIPAL (Balance)	
	INTEREST	
	FINAL BALANCE	

26. Put the ratio 24 : 30 in its simplest form.

27. Divide $240 among 2 people in the ratio 3 : 2

28. The ratio of girls to boys in a school is 2 : 5
If there are 140 girls, how many boys are there?

Mathematics

YEAR 7 -8

Excellent work !

Calculators may be used.
Attempt ALL questions.

Show all necessary working.
Total Marks: Time: 1hour

1. Round 3756.348
    a) to 2 decimal places   b) to the nearest 100.

    a) $3756 \cdot 35$ ✓   b) 3800 ✓

2. List the even multiples of 3 less than 20.

    $6, 12, 18$ ✓

3. Find the highest common factor of 8 and 20.

    4 ✓

4. Express 72 as a product of its prime factors.
    Give the answer in index notation.
    You may use a factor tree.

    $3^2 \times 2^3$ ✓

5. Evaluate i) $3 \div 1\frac{1}{2}$ ii) $3\frac{1}{3} - 1\frac{1}{4}$

    (i) $\frac{3}{1} \times \frac{2}{3}$ ✓

    $= 2$ ✓

    (ii) $3\frac{1}{3} - 1\frac{1}{4} = 2\frac{4-3}{12} = 2\frac{1}{12}$ ✓

6. Write $1\frac{2}{5}$ as an improper fraction.

    $\frac{7}{5}$ ✓

7. Which is larger $0 \cdot 440$ or $0 \cdot 404$?

    $0 \cdot 440$ ✓

8. Evaluate $4 \cdot 36 + 1 \cdot 7$

$= 6 \cdot 06$ ✓

9. Evaluate   i) $(8+4) \div 4 \times 3$ $12 \div 4 \times 3$

$= 9 \overset{3 \times 3}{}$ ✓

ii) $(8 + 4 \div 4) \times 3$ 9×3

$= 27$ ✓

10. Write 0.27 as a fraction. $\dfrac{27}{100}$ ✓

11. Write 0.325 as a percentage.

$32 \cdot 5 \%$ ✓

12. Which is the smallest number $0 \cdot 3$ or $\dfrac{3}{10}$?   Show working.

$0 \cdot 3 = \dfrac{3}{10}$ $\therefore 0 \cdot 3 = \dfrac{3}{10}$ ✓

13. Evaluate $5^2 \times 2^3$

$25 \times 8 = 200$ ✓

14. Write down the next three numbers in the sequence

$0, 11, 23, 36, 50, \underline{65}, \underline{81}, \underline{98},$ ✓

15. Evaluate 16% of $60

$\dfrac{16}{100} \times \dfrac{60}{1} = \dfrac{48}{5} = \$9 \cdot 80$ ✓

16. Express $3 \cdot 2 \times 10^3$ as an ordinary number.

$3 \cdot 2 \times 10^3 = 3200$ ✓

17. Calculate $(2 \cdot 17)^3$ correct to 2 decimal places.

$10 \cdot 22$ ✓

18. Calculate the average of $17, $21 and $16.

$18 ✓

19. Express 68241 in standard form. (i.e. in the form $6 \cdot 8241 \times 10^p$).

$6 \cdot 8241 \times 10^4$ ✓

20. A car salesman sells a vehicle for $22 500 and receives a commission of 4%. How much does he earn?

$900 ✓

21. Express $35 as a percentage of $120 ?

$\dfrac{35}{120} \times \dfrac{100}{1} = \dfrac{175}{6} = 29\frac{1}{6}\%$ ✓

22. Find the loss, as a percentage of the cost price, when the selling price of an article is $345 and the cost price is $360.

$4\frac{1}{6}\%$ loss · ✓

23. Find the simple interest on $3700 for 3 years at 11% per annum.

$1221 ✓

24. What number is 6 less than -2 (negative two) ?

-8 ✓

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25. Complete all the calculations of this compound interest problem in the third column showing all working.

A sum of $5000 is invested at 12% p.a. compound interest for 3 years. Find the total value of the investment at the end of 3 years, giving your answer to the nearest cent.

FIRST YEAR	PRINCIPAL	$5 000
	INTEREST	12% of $5 000 = $600 ✓
SECOND YEAR	PRINCIPAL (Balance)	$5600 ✓
	INTEREST	12% of $5600 = $672 ✓
THIRD YEAR	PRINCIPAL (Balance)	$6272 ✓
	INTEREST	$6272 × 12% = $752·64 ✓
	FINAL BALANCE	$7024·64 ✓

26. Put the ratio 24 : 30 in its simplest form.

12 : 15   = 4 : 5 ✓

27. Divide $240 among 2 people in the ratio 3 : 2

$144, $96 ✓

28. The ratio of girls to boys in a school is 2 : 5
If there are 140 girls, how many boys are there?

350 boys. ✓