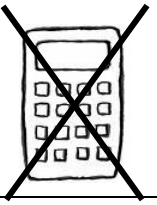
Name:	Teacher Assessment



Section A Squares, Cubes, Roots & Index Notation Grade F → C

1. Work out the difference between the two square numbers in this list of numbers.

6 11 15 21 27 36 48 64

.....

.....

.....

Answer .....

(Total 2 marks)

2. From the list of numbers

4 9 20 27 32 51 65 81 125

write down the cube numbers.

.....

.....

Answer .....

(Total 2 marks)

3. (a) Here is a list of numbers.

4 6 8 9 10 11 12

(i) Write down a prime number from the list.

Answer .....

(1)

(ii) Write down a cube number from the list.

Answer .....

(1)

(b) Calculate $2^3 \times 5^2$

.....

Answer .....

(2)

(Total 4 marks)

4. Write down the values of

(a) 4^2

.....

Answer .....

(1)

(b) $\sqrt{81}$

.....

Answer .....

(1)
(Total 2 marks)

5. (a) Work out 3^3

.....

.....

.....

Answer .....

(1)

(b) Give an example of a cube number that does **not** divide exactly by three.

.....

.....

.....

Answer .....

(1)
(Total 2 marks)

6. Work out

(a) 5^3

.....

Answer .....

(1)

(b) $\frac{8^2}{2^3}$

.....

.....

Answer .....

(2)(Total 3 marks)

7. (a) Work out the cube of 4.

.....

.....

Answer .....

(1)

(b) Work out 2^5

.....

.....

Answer .....

(1)
(Total 2 marks)

8. (a) Write down the square root of 49.

.....

Answer .....

(1)

(b) Work out the value of 10^4

.....

Answer .....

(1)
(Total 2 marks)

9. (a) Which is larger, 4^3 or 3^4?
You **must** show your working.

.....

.....

.....

Answer .....

(Total 2 marks)

10. Work out the value of $5^3 - 4^3$.

.....

.....

.....

Answer .....

(Total 2 marks)

11. Glynn says that $\sqrt{16+9}$ is the same as $\sqrt{16}+\sqrt{9}$. Show that Glynn is wrong.

.....

.....

(Total 2 marks)

12. Which is greater, 3^2 or $\sqrt{70}$? You must show your working.

.....

.....

.....

Answer .....

(Total 3 marks)

13. Estimate $\sqrt{97}$ giving your answer to the nearest whole number.

.....

.....

Answer .....

(Total 1 mark)

14. James thinks that when you square a number you **always** get an odd number answer.

Give an example to show that James is wrong.

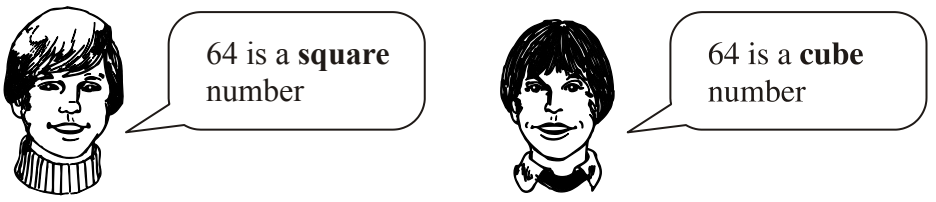
.....

.....

Answer .....

(Total 2 marks)

15.



Tom and Sam are both right. Explain why.

.....

.....

.....

.....

(Total 2 marks)

16. Work out 0.2^2

.....

.....

Answer .....

(Total 1 mark)

17. Write down the value of $\sqrt[3]{27}$

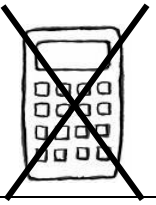
.....

Answer .....

(Total 1 mark)

Success:	Target:

Teacher Assessment



Section B Using Index Laws Grade D / C

1. Simplify $t^2 \times t^3$

.....

Answer .....

(Total 1 mark)

2. Simplify $g^4 \times g^4$

.....

Answer .....

(Total 1 mark)

3. Simplify

(a) $m^2 \times m^5$

.....

Answer .....

(1)

(b) $p^6 \div p^3$

.....

Answer .....

(1)

(c) $(q^4)^2$

.....

Answer .....

(1)

(Total 3 marks)

4. Simplify

(a) $w^6 \times w^2$

.....

Answer .....

(1)

(b) $x^3 \div x^5$

.....

Answer .....

(1)

(c) $(y^3)^2$

.....

Answer .....

(1)

(Total 3 marks)

5. Simplify

(i) $y^4 \times y^{-3}$

.....

Answer .....

(1)

(ii) $y^4 \div y^5$

.....

Answer .....

(1)

(Total 2 marks)

6. Simplify

(i) $x^5 \times x^{-2}$

.....

.....

Answer .....

(1)

(ii) $y^5 \div y^{-2}$

.....

.....

Answer .....

(1)

(Total 2 marks)

7. (a) Simplify

(i) $y^7 \times y^2$

.....

Answer .....

(1)

(ii) $y^7 \div y^2$

.....

Answer .....

(1)

(iii) $(y^7)^2$

.....

Answer .....

(1)

(b) (i) If $y = -1$ which answer in part (a) is positive?

.....

Answer .....

(1)

(ii) If $y = 0.5$ which answer in part (a) has the greatest value?

.....

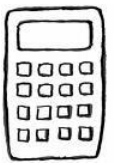
Answer .....

(1)

(Total 5 marks)

Success:	Target:

Teacher Assessment



Section C Using your Calculator Grade E → C

1. Calculate (a) 3^6

Answer .....

(1)

(b) $\frac{1}{12.5}$

Answer .....

(1)

(c) $5.4^2 - \sqrt{3.24}$

Answer .....

(1)

(Total 3 marks)

2. Use your calculator to work out $\frac{1}{0.2^2}$

.....

Answer .....

(Total 2 marks)

3. (a) Work out the cube of 17.

Answer .....

(1)

(b) Work out $\frac{1}{3.2} + 2.6^2$

Answer .....

(1)

(Total 2 marks)

4. (a) Calculate $\sqrt{9.61}$

.....

Answer .....

(1)

(b) Calculate $\sqrt{9.61} + 2.9^2$

.....

Answer .....

(1)

(Total 2 marks)

5. (a) Calculate $2.7^2 + \sqrt{3.5}$

……

Answer …….

(1)

(b) Calculate the cube of 4.2

……

Answer ……..

(1)

(Total 2 marks)

6. Calculate $3.4^2 + 2^3$

……

Answer .....

(Total 2 marks)

7. (a) Find the square of 27.5

.....

Answer.....

(1)

(b) Find the square root of 196

.....

Answer.....

(1)

(c) Find the value of $\frac{1}{0.4} - \frac{1}{1.6}$

.....

.....

Answer.....

(3)

(Total 5 marks)

8. (a) Calculate the cube of 8.7

……

Answer ……

(1)

(b) Calculate $\sqrt{\frac{7}{2.3}}$

……

Answer ……

(1)

(c) Calculate $\frac{(8.7+4.2)}{1.75}$

……

Answer ……

(1)
(Total 3 marks)

9. (a) Work out 3.7^2

.....

Answer .....

(1)

(b) Work out the cube of 4

.....

Answer .....

(1)

(c) Work out $3 \div 0.7^2$

(i) Write down the full calculator display.

Answer .....

(1)

(ii) Give your answer to the nearest whole number.

Answer .....

(1)

(d) (i) Calculate $\frac{9.8}{6.7-1.2}$

Answer .....

(1)

(ii) Give your answer to an appropriate degree of accuracy.

Answer .....

(1)
(Total 6 marks)

10. (a) Use your calculator to find the square root of 2116.

.....

Answer .....

(1)

(b) Use your calculator to work out $\frac{1}{\sqrt{2116}}$

(i) Write down your full calculator display.

.....

Answer .....

(1)

(ii) Give your answer to 3 decimal places.

.....

Answer .....

(1)

(Total 3 marks)

11. (a) Find the square root of 1225.

.....

Answer .....

(1)

(b) Find the value of $\frac{1}{\sqrt{1225}}$

Give your answer to 3 decimal places.

.....

Answer .....

(2)

(Total 3 marks)

12. Work out $7.5^2 + 0.4^3$

(a) Write down your full calculator display.

……

Answer ……

(1)

(b) Write your answer to one decimal place.

Answer ……

(1)

(Total 2 marks)

13. (a) Work out 3.1^2

Answer .....

(1)

(b) Calculate $\frac{10.2}{4.1 \times 1.8}$

(i) Write down your full calculator display.

Answer .....

(1)

(ii) Write your answer to 1 decimal place.

Answer .....

(1)
(Total 3 marks)

14. (a) Work out 5^3

.....

Answer .....

(1)

(b) Work out $2.4 \div 1.8^2$

(i) Write down the full calculator display.

Answer .....

(1)

(ii) Give your answer to the nearest whole number.

Answer .....

(1)
(Total 3 marks)

15. (a) Work out $\frac{4.5}{0.6^2}$

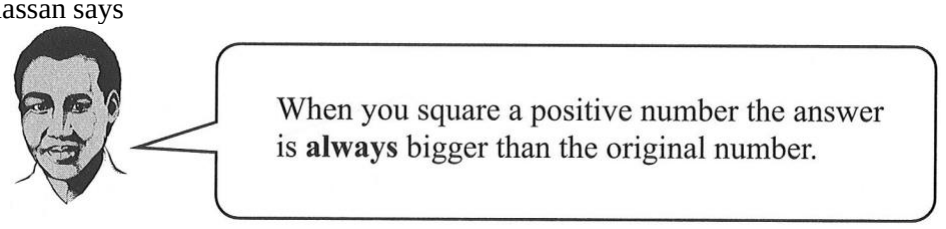
.....

.....

Answer .....

(1)

(b) Hassan says



For example

$2.5^2 = 6.25$ and 6.25 is bigger than 2.5

Find an example to show that Hassan is wrong.
You **must** show your working.

.....

.....

.....

(2)
(Total 3 marks)

Success:	Target: