Name _____ Date _____

Midterm exam Review (Unit1,2,3)

Question 1. Fill in the missing numbers.

a $10 + -8 =$ _____

b $-9 +$ _____ $= 3$

c $4 \times -5 =$ _____

d $-45 \div$ _____ $= -5$

e $4^3 =$ _____

f $\sqrt{81} =$ _____

Question 2:

a Find the lowest common multiple (LCM) of 6 and 9.

_____

_____

b Find the highest common factor (HCF) of 48 and 60.

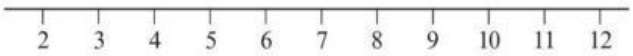
_____

_____

LIVEWORKSHEETS

Question 3:

a Show the inequality $x > 6$ on the number line below.



b For the inequality $y < -2$, write down the greatest integer that y could be.

_____

Question 4:

Use the formula $T = mg$ to answer these questions.

Circle the correct answer, **A**, **B** or **C**.

a When $m = 5$ and $g = 9$, the value of T is **A** 59 **B** 14 **C** 45

b When $m = 9$ and $T = 90$, the value of g is **A** 810 **B** 10 **C** 99

Question 5:

Simplify these expressions by collecting like terms.

a $4c + 8c + 5d - d$ _____

b $6xy + 2xz + 4yx - 9zx + 15$ _____

Question 6:

Kim expands the bracket $5(2x - 3)$ and gets the answer $10x - 3$.

Is Kim correct? Tick one box.

Yes ☐ No ☐

Explain your answer. _____

LIVEWORKSHEETS

Question 7:

Work out:

a 42.5×10^3 _____

_____

b $9\,600\,000 \div 10^7$ _____

_____

c 1.5×1000 _____

_____

d $32 \div 100$ _____

_____

e $94\,600\,000 \div 10^8$ _____

Question 8:

Here is a list of numbers:

32 81 8 156 4 29 21 3

Using numbers only from this list, write down:

a a multiple of 7 _____

b a factor of 20 _____

c a common factor of 9 and 15 _____

d a number that is divisible by 6 _____

LIVEWORKSHEETS

e a square number _____

Question 9:

Circle the correct answer.

a 14.432 rounded to the nearest tenth is

A 14.5 **B** 14.4 **C** 14

b 189.95 rounded to the nearest whole number is

A 200 **B** 189 **C** 190

Question 10: Put a tick [✓] in the box next to the **expression**.

$3x+9$ ☐ $3x+9=12$ ☐

Question 11:

Estimate the answers to these questions by rounding the numbers to the nearest integer.

a −6.15+9.93 _____

b 7.88−−9.13 _____

c −11.3+−8.81 _____

d 12.19−5.62 _____

Question 12:

This subtraction table shows that 3-6=-3. Copy and complete the table

−	−4	6	
3		−3	1
−3			

LIVEWORKSHEETS

Question 13: Work out:

a $(-5+2)\times 4$ _____

b $(-6+-4)\times 3$ _____

c $(1--3)\times -7$ _____

d $(-2--5)\times -10$ _____

Question 14: Work out the missing numbers.

a $3 \times \ldots\ldots = -24$ b $6 \times \ldots\ldots = -18$ c $-2 \times \ldots\ldots = -26$ d $-12 \times \ldots\ldots = -60$

Question 15:

Estimate the answers to these questions by rounding the numbers.

a 423×-2.9 _____

b -32×-28 _____

c -6.1×219 _____

d $-612 \div 2.92$ _____

Question 16:

The product of 2 and −9 is −18.

a Find three more pairs of integers with a product of −18.

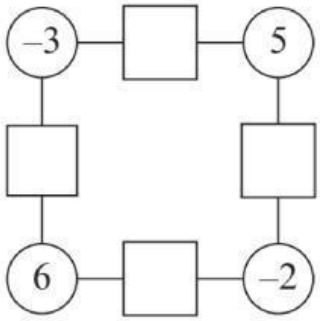
b Are there more pairs of integers with a product of −18?

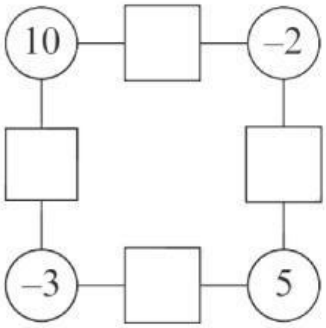
_____

How can you be sure? _____

LIVEWORKSHEETS

Question 17: In these diagrams, the integer in a square is the product of the integers in the circles next to it.





a Copy each diagram and fill in the squares.

b Add the numbers in the squares in each diagram.

Question 18: Find the LCM of 3, 8 and 9:

_____

Question 19: Look at these numbers: 90 92 94 96 98 100

a Which number is a multiple of 9 and 10? _____

b Is this number the lowest common multiple?

_____

Question 20: 24×4=96

a Explain why 96 is a common multiple of 4 and 24.

_____

b Is 96 the lowest common multiple of 4 and 24? Give evidence to justify your answer.

_____

LIVEWORKSHEETS

Question 21: Two numbers have a LCM of 45. The two numbers add up to 14. Find the two numbers

a. Find the common factors of 30 and 45.
_____

b. Find the highest common factor of 30 and 45_____

Question 22: The HCF of two numbers is 4. Both numbers are more than 4 and less than 30.

a Show that the numbers could be 8 and 12.

_____

b Show that the numbers are not 8 and 16.

_____

c Find all the other possible values of the two numbers

_____

Question 23:

A. Use the digits 5, 4, 2 and 1 to make a number that is divisible by:

divisible by **5** _____ divisible by **3** _____

B. Can you arrange the digits 5, 4, 2 and 1 to make a number that is divisible by:

divisible by **9** _____ divisible by **11** _____

Question 24: A number is divisible by 15 if it is divisible by 3 and 5.

a Show that 7905 is divisible by 15. _____

_____

LIVEWORKSHEETS

b The number 208** is divisible by 15. Find the possible values of the two missing digits

_____

Question 25: Work out

√64 = _____ √100 = _____

√9 = _____ √225 = _____

Question 26: Work out

$2^3 + 5^3$ =_____

$4^3 - 2^3$ =_____

Question 27: Work out

$\sqrt{\square} = 25$ $\sqrt{\square} = 30$

$\sqrt[3]{\square} = 10$ $\sqrt[3]{\square} = 15$

Question 28:

Cheng has s strawberries. Write an expression for someone who has:

a two more strawberries than Cheng _____

b three times as many strawberries as Cheng _____

c six fewer strawberries than Cheng_____

d half as many strawberries as Cheng _____

LIVEWORKSHEETS

Question 29: Nesreen thinks of a **number n.** Write an expression for the number Nesreen gets each time.

a She multiplies the number by 6. _____

b She divides the number by 5. _____

c She multiplies the number by 5, then adds 1. _____

d She multiplies the number by 7, then subtracts 2. _____

e She divides the number by 10, then adds 3. _____

f She multiplies the number by 3, then subtracts the result from 25_____

Question 30:

Match each description (**a** to **f**) to the correct expression (**i** to **vii**).

	Description		Expression
a	Multiply x by 5 and subtract from 4.	**i**	$4x+5$
b	Multiply x by 4 and add 5.	**ii**	$4x-5$
c	Multiply x by 5 and subtract 4.	**iii**	$4-5x$
d	Multiply x by 5 and add 4.	**iv**	$5-4x$
e	Multiply x by 4 and subtract 5.	**v**	$5x-4$
f	Multiply x by 4 and subtract from 5.	**vi**	$5-5x$
		vii	$5x+4$

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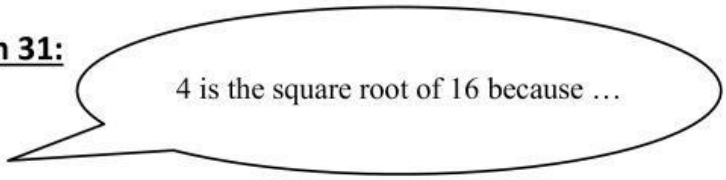
Question 30: Write an expression for each of these descriptions.

a k more than g b h less than t

c y more than eight times x d three times a multiplied by b

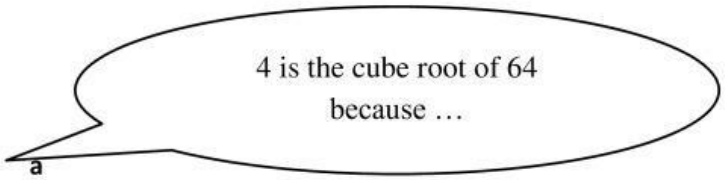
Question 31:



i 16 is divisible by 4

ii you find both 4 and 16 in the 4 times table

iii 4 multiplied by itself is 16



a

iv 4 times 16 is 64

v 4 times 4 is 16 and multiplying by 4 again gives 64

vi 64 can be divided by 4 but not by 6

Question 32: Write a formula for the number of hours in any number of days, using:

i words _____

ii letters _____

Use your formula in part a ii to work out the number of hours **in four days**

_____

LIVEWORKSHEETS

Question 33:

a Use the formula A =bh to work out A when:

i b= 4 and h=5

_____

ii b=3 and h=12

_____

b Work out the value of b when A =52 and h=4

_____

Question 34:a Write a formula for the number of hours for any number of minutes, in:

i words _____

ii letters _____

b Use your formula in part a ii to work out the number of hours in 360 minutes

_____

Question 35: Simplify these expressions by collecting like terms.

a 3x+4x+5y _____ b 5z+5z+5a+a _____

c 3a+4b+4a+5b _____ d 4x+5+3x+2 _____

e d+1+d+1 _____ f 5f−3f+ 12g−3g_____

g 45−15+12w−w _____ h 7x+5y−3x+y_____

i 8a+6b−4a−5b _____ j 4w+3x+7y−2w−3x+ 13y _____

Question 36:

Multiply out the brackets.

a. 5(2p+1) _____ b. 7(3q+2) _____

c. 9(2r+ 3) _____ d. 11(3s− 4a+7) _____

e. 2(2t −5) _____ f. 4(5u−1) _____

g. 6(1+ 2v) _____ h. 8(6 +4w−3g) _____

i. 10(6 +7x) _____j. 5(3−5x) _____

LIVEWORKSHEETS

k. 5(4−3x) _____ l. 5(5k−8x − 6h) _____

Question 37:

Zara solves these equations:

2a− 11=−7 _____

4 =b+16 _____

6c+7=25 _____

−12=3d+9_____

Is Zara correct? Show all your working and explain your answer

Question 38:

Use the formula w =2x+ y−3z to work out:

a.w when x =8, y=−3 and z=7

---

b.x when w=15, y=9 and z=−4

_____

c. y when w=−10, x=6 and z=2

_____

d. z when w=20, x=15 and y= 8

_____

Question 39:

Write down if A, B or C is the correct answer to each of the following.

a For the inequality h > 5, the smallest integer that h could be is:

A 4 **B 5** **C 6**

b For the inequality j > −7, the smallest integer that j could be is:

A −8 **B −7** **C −6**

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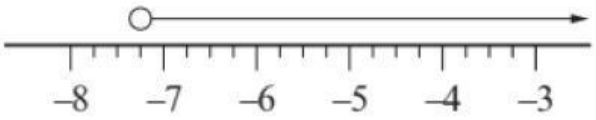
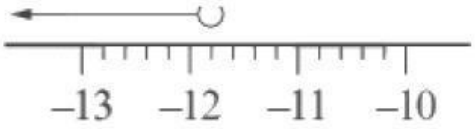
Question 40:

Write down the inequality shown on these number lines. Use the letter w.

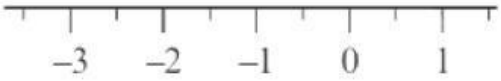




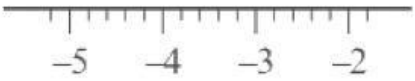
Question 41:

Copy each number line and show each inequality on the number line.

$y < -1.5$



$y > -4.4$



Question 42:

Write down whether A, B or C is the correct answer.

a 240 000÷105 A 24 B 2.4 C 0.24

b 7020÷106 A 0.00702 B 0.0702 C 0.702

c 8 700 000÷ 108 A 87 B 0.87 C 0.087

Question 43: Work out the following.

a $(3.6\ 10^4) + \frac{15\ 000}{3}$ _____

b $4\times(2310000\div10^6)$ _____

LIVEWORKSHEETS

c $(0.005\times10^3)^2$ _____

d $(256000000\div10^7)-(0.000049\times10^5)$ _____

Question 44:

Round each of these numbers to one decimal place. Choose **A** or **B** is the correct answer.

a	4.671 =	A	4.6	B	4.7
b	9.055 =	A	9.0	B	9.1
c	3.733 =	A	3.7	B	3.8
d	6.915 =	A	6.9	B	7.0
e	0.858 =	A	0.8	B	0.9

Question 45:

Round each of these numbers to four decimal places (4 d.p.).

The first one has been done for you.

a 3.882615=3.8826 (4 d.p.)

b 61.89022 _____

c 143.56228 _____

d 200.006789 _____

e 300.000555 _____

f 18.25252525 _____

Question 46:

Round each of these numbers to two decimal places (2 d.p.). The first one has been done for you.

a 4.983=4.98 (2 d.p.) b 9.037 ..... c 24.332 .....

d 128.641 ..... e 0.66582 .....f 0.03174 .....

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Question 47:

Use a calculator to work out the answers to the following. Round each of your answers to the given degree of accuracy.

a 19÷11 = ... (2 d.p.)

b 12.4 ÷ 11 = ... (3 d.p)

Question 48:

1 Work out:

a $6\,000 \div 10^2$ _____ **[1]**

b $89\,000\,000 \div 10^4$ _____ **[1]**

c $35 \div 10^3$ _____ **[1]**

Question 49:

Round each of these numbers to the given degree of accuracy.

a 16.952 (2 decimal places) _____ **[1]**

b 449.567891 (4 decimal places) _____ **[1]**

c 813.02981 (3 decimal places) _____ **[1]**

d 7.9986 (2 decimal places) _____ **[1]**

Question 50:

a. Write 10^6 in numbers. _____

b. Write 10^5 in words. _____

c. Write 10 000 000 as a power of 10.

_____

LIVEWORKSHEETS