Name: ………………………………

Date: / 9 / 2025

Subject: Worksheet (1) / Unit (1)

Number

Grade: 7 (A, B, C, D, E)

1.1 Calculating with negative numbers

Q1: Work out.

a) $5 + (-3) =$

b) $-8 + 12 =$

c) $-15 - (-7) =$

d) $-35 + (-30) =$

e) $16 \times (-9) =$

f) $-27 \times 4 =$

g) $-12 \times (-5) =$

h) $15 \times (-8) =$

i) $342 \div (-3) =$

j) $-154 \div 7$

k) $-45.18 \div (-9) =$

l) $72 \div (-12) =$

Q2: Substitute the values into each expression and work out its value.

$a)\ 3x - 4\ when\ x = -6$

$b)\ u + at\ when\ u = 3, a = -9\ and\ t = 6$

$c)\ m(p - t)when\ m = -3, p = 5\ and\ t = -7$

$d)\ a - (2ab + c)\ when\ a = 8, b = -4\ and\ c = 2$

Q3: Expand the brackets to work these out.

Check your answers using the order of operations.

a. $7 \times (-6 - 3)$	b. $-2(-5 + 8)$
c. $3 \times (-4 - 5) + 13$	d. $-4(12 - 2) - 9$

Q4: a) Work out these calculations.

    i. $(-2)^2 =$ _____

    ii. $(-5)^2 =$ _____

    iii. $(-10)^2 =$ _____

    iv. $(-12)^2 =$ _____

b) Write the positive and negative square roots of these numbers.

    i. $\sqrt{9} =$ _____ and _____

    ii. $\sqrt{16} =$ _____ and _____

    iii. $\sqrt{49} =$ _____ and _____

    iv. $\sqrt{196} =$ _____ and _____

1.2 Prime factor decomposition

Q5: Write each number as a product of its prime factors.

a) $84 =$

b) $180 =$

c) 126

d) 400

Q6: Use prime factor decomposition to find the HCF and the LCM of each pair
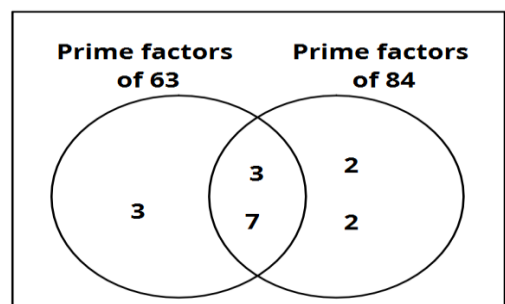of numbers.

a) 45 and 60

HCF = _____
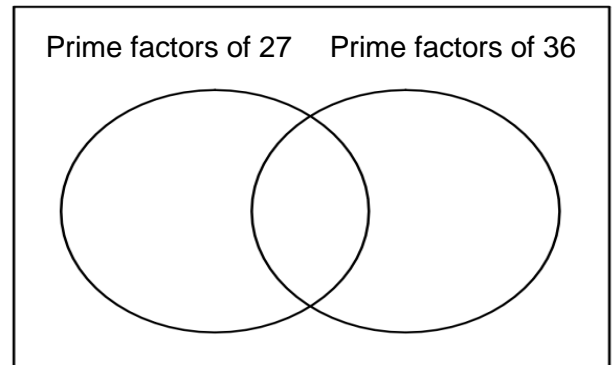
LCM = _____

b) 18 and 24

HCF = _____

LCM = _____

Q7: Use the following Venn diagram to find the HCF and the LCM of 63 and 84

HCF = _____

LCM = _____

Prime factors of 63   Prime factors of 84

3   3   2

3   7   2

Q8: a) Write the prime factors of 27 and 36 in this Venn Diagram.

Prime factors of 27   Prime factors of 36

b) Find the HCF and the LCM of 27band 36.

HCF = _____

LCM = _____

1.3 Using indices

Q9. Write each of these as a single power.

a) $2^3 \times 2^2 = $ _____

b) $5^4 \times 5^8 = $ _____

c) $7^2 \times 7^5 \times 7^9 = $ _____

d) $3^5 \div 3^2 = $ _____

e) $6^7 \div 6^3 = $ _____

f) $\dfrac{8^9}{8^5} = $ _____

g) $(2^2)^3 = $ _____

h) $(3^3)^2 = $ _____

i) $(7^4)^2 = $ _____

j) $\dfrac{2^3 \times 2^5}{2^4} = $ _____

k) $\dfrac{5^4}{5 \times 5^2} = $ _____

l) $\dfrac{10^6 \times 10^5}{10^4 \times 10^7} = $ _____

Q10: Write each calculation as a single power.

a) $25 \times 125 \times 625$

b) $\dfrac{7^9}{343}$

c) $\dfrac{36 \times 1296}{6^3}$

1.4 Priority of operations

Q11: Make the calculation correct by putting in a set of brackets.

a) $8 - 3 \times 2 + 5 = 15$ b) $20 - 2^3 \div 4 = 3$

c) $120 - 1 + 3^2 \times 5 = 40$ d) $32 - 2 \times 3 + 4 = 18$

Q12. Work out.

a) $2 + 3^2 =$ b) $\sqrt{16} + 5^2 =$

c) $(6 + 2^2) \div 2 =$ d) $\sqrt{81} + (4^2 - 6) \div 2 =$