Rosary School \ Marj Elhamam

Name: _____ Date: / 9 / 2025

Subject: Practice worksheet (2) / unit (1) Grade : 7 ( )

Number

1.1 Calculating with negative numbers

Q1. Work out.

a) 6 + (-4) = 2

b) -10 + 15 = 5

c) -20 - (-8) = -12

d) -40 + (-25) = -65

e) 14 × (-8) = -112

f) -30 × 3 = -90

g) -15 × (-6) = 90

h) 18 × (-7) = -126

i) 250 ÷ (-5) = -50

j) -168 ÷ 8 = -21

k) -54.27 ÷ (-9) = 6.03

l) 84 ÷ (-14) = -6

Q2. Substitute the values into each formula and work out the answers.

a. $Y = 4x - 5 \; when \; x = -7$

Y = -33

b. $V = u + at \;\; when \; u = 5, a = -8 \; and \; t = 4$

V = -27

c. $S = m(p - t) when \; m = -4, p = 6 \; and \; t = -8$

S = -56

d. $L = a - (2ab + c) \;\; when \; a = 9, b = -3 \; and \; c = 4$

L = 59

Q3. Expand the brackets to work these out.

Check your answers using the order of operations.

a. $8 \times (-5 - 2)$ = -56	b. $-3\,(-5 + 9)$ = -12
c. $9 \times (-7 - 2) + 23$ = -58	d. $-5\,(22 - 15) - 8$ = - 43

Q4. a) Work out these calculations.

i. $(-3)^2 = 9$

ii. $(-8)^2 = 64$

iii. $(-13)^2 = 169$

iv. $(-14)^2 = 196$

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

i. $\sqrt{64} = 8$ and -8

ii. $\sqrt{144} = 12$ and -12

iii. $\sqrt{225} = 15$ and -15

iv. $\sqrt{169} = 13$ and -13

1.2 Prime factor decomposition

Q5. Write each number as aproduct of its prime factors.

a. $96 = 3 \times 2^5$

b. $150 = 2 \times 3 \times 5^2$

c. $108 = 2^2 \times 3^3$

d. $300 = 2^2 \times 3 \times 5^2$

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

a. 25 and 50

The HCF = 25

The LCM = 50

b. 30 and 65

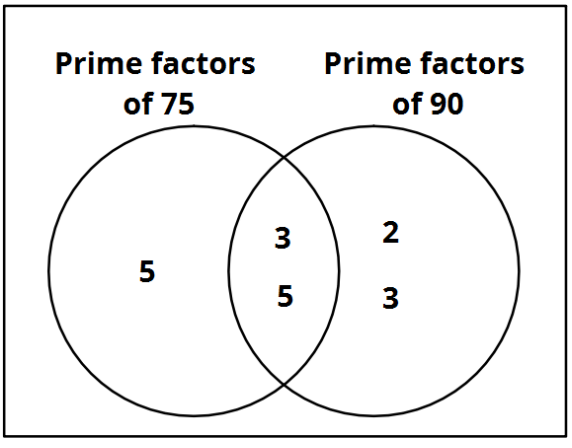
The HCF = 5

The LCM = 390

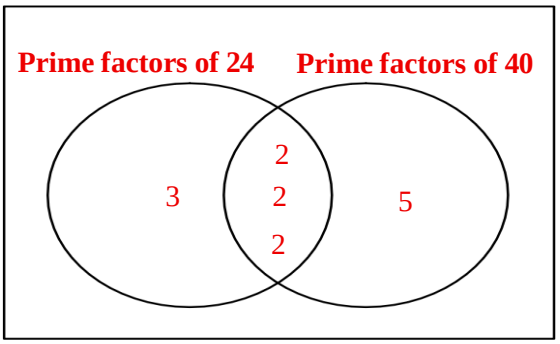
Q7. Use the following Venn diagram to find the HCF and the LCM of 75 and 90

The HCF = 15

The LCM = 450



Q8. a. Write the prime factors of 24 and 40 in this Venn Diagram.



b. Find the HCF and the LCM of 24 and 40.

The HCF = 8

The LCM = 120

1.3 Using indices

Q9. Write each of these as a single power.

a. $3^4 \times 3^2 = 3^6$

b. $6^7 \times 6^8 = 6^{15}$

c. $2^3 \times 2^7 \times 2^8 = 2^{18}$

d. $8^{12} \div 8^5 = 8^7$

e. $11^9 \div 11^3 = 11^6$

f. $\frac{10^6}{10^4} = 10^2$

g. $(4^5)^2 = 4^{10}$

h. $(9^6)^3 = 9^{18}$

i. $(5^4)^6 = 5^{24}$

j. $\frac{3^3 \times 3^7}{3^5} = 3^5$

k. $\frac{6^8}{6 \times 6^7} = 6^0 = 1$

l. $\frac{12^8 \times 12^7}{12^6 \times 12^3} = 12^6$

Q10. Write each calculation as a single power.

a. $8^5 \times 64 \times 512 = 8^{10}$

b. $\frac{4^9}{64} = 4^6$

c. $\frac{81 \times 729}{9^4} = 9^2$

1.4 Priority of operations

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

a. $10 - (4 \times 3) + 2 = 0$

b. $35 - 3^3 \div (4 + 5) = 32$

c. $(7 - 2) \times 3^2 + 16 = 61$

d. $100 - 6 \times (2 + 2)^2 = 4$

Q12. Work out.

a. $3 + 4^3 = 67$

b. $\sqrt{49} + 9^2 = 88$

c. $(8 + 4^3) \div 2 = 36$

d. $\sqrt{121} + (6^2 - 8) \div 2 = 25$