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Class: 3C3 Date: 29 Oct 03 No: -

Maths D Holiday HW

Arithmetic 1.1 P1

41a. $(\frac{3}{10})^2$

$= \frac{9}{100}$ #

b. 5^{-2}

$= \frac{1}{5^2}$

$= \frac{1}{25}$ #

42a. 63

1	63
3	21 ✓
7	9 ✓

as 1 is not a prime no,

$63 = (3 \times 21)$ or (7×9)

$= (3 \times 3 \times 7)$ $(7 \times 3 \times 3)$

$\therefore 63 = 3 \times 3 \times 7$ #

b. Multiples of 35:

35, 70, 105, 140, 175, 210, 245, 280, 315.

Multiples of 63:

63, 126, 189, 252, 315

$315 = 63n$

$\therefore n = 5$ #

43a. $\sqrt[3]{8 \times 10^6}$

$= (2^3 \times 10^6)^{\frac{1}{3}}$

$= 2 \times 10^2$

$= 200$ #

b. $103\,940\,000 \approx 104\,000\,000$

$= 1.04 \times 10^8$ #

44a. $3\text{ mg} = 0.003\text{ g}$ #

b. $1\text{ mg} = \frac{1}{1000}\text{ g}$

$1\,\mu\text{g} = \frac{1}{1000\,000}\text{ g}$

$1\text{ mg} = \frac{1}{1000} \div \frac{1}{1000\,000}$

$= \frac{1}{1000} \times \frac{1000\,000}{1}$

$= 1000\,\mu\text{g}$ #

c. $1\text{g} = 1000\,000\,\mu\text{g}$

$100\text{g} = 10^8\,\mu\text{g}$

Fraction $= \frac{300}{10^8}$

$= \frac{3}{1000\,000}$ #

45a. $21.6 - 2.47$

$= 19.13$ #

b. $\frac{4}{5} \div 1\frac{1}{2}$

$= \frac{4}{5} \times \frac{2}{3}$

$= \frac{8}{15}$ #

46. $60 = 2^2 \times 3 \times 5$

$= 2 \times 2 \times 3 \times 5$

$126 = 2 \times 3^2 \times 7$

$= 2 \times 3 \times 3 \times 7$

a. largest factor $= 2 \times 3$

$= 6$ #

b. $60 = (2 \times 3) \times 2 \times 5$

$126 = (2 \times 3) \times 3 \times 7$

$60 \times 3 \times 7 = 1260$

$126 \times 2 \times 5 = 1260$

Multiple of 60 and 126 $= 1260$ #

Date No.

47a. Upper bound for length
$= 12.5\text{ cm}$ #

b. Smallest possible perimeter
$= (11.5 + 6.5) \times 2$
$= 36\text{ cm}$ #

48. $p = 8 \times 10^9$
$q = 4 \times 10^7$

a. $p \times q = 8 \times 10^9 \times 4 \times 10^7$
$= 32 \times 10^{16}$
$= 3.2 \times 10^{17}$ #

b. $q \div p = (4 \times 10^7) \div (8 \times 10^9)$
$= (4 \div 8) \times 10^{7-9}$
$= 0.5 \times 10^{-2}$
$= 5 \times 10^{-3}$ #

c. $p + q = (8 \times 10^9) + (4 \times 10^7)$
$= 8040000000$
$= 8.04 \times 10^9$ #

49a. $6 + 4 \div 2$
$= 6 + 2$
$= 8$ #

b. $\frac{3}{4} \div \frac{1}{10}$
$= \frac{3}{4} \times \frac{10}{1}$
$= \frac{30}{4}$
$= 7\frac{1}{2}$ #

50a. Prime nos. = 5, 17 #
b. Square nos. = 9, 121 #
c. Irrational nos. = $\sqrt{2}$, π #

51a. In sq. km = 803 944
$\approx 804\,000$
$= 8.04 \times 10^5\text{ km}^2$ #

b. In sq. m = $8.04 \times 10^5 \times 10^6$
$= 8.04 \times 10^{11}\text{ m}^2$ #

52a. $0.85 = \frac{85}{100}$
$= \frac{17}{20}$ #

b. $3\frac{1}{2} - 2\frac{2}{3} = \frac{7}{2} - \frac{8}{3}$
$= \frac{21}{6} - \frac{16}{6}$
$= \frac{5}{6}$ #

53a. $4.5 \times 0.4 = \frac{45}{10} \times \frac{4}{10}$
$= \frac{180}{100}$
$= 1.8$ #

b. $12 \div 0.8 = \frac{120}{10} \div \frac{8}{10}$
$= \frac{\cancel{120}^{15}}{\cancel{10}_{1}} \times \frac{\cancel{10}}{\cancel{8}_{1}}$
$= 15$ #

54a. $1.32\text{ kg} = 1320\text{ g}$ #
b. $345\text{ cm}^2 = 0.00345\text{ m}^2$ #

55a. Length of edge $= \sqrt[3]{200}$
$= 5.84\ldots$
$= 6\text{ cm}$ (nearest cm) #

b. Volume $= \frac{4}{3} \times \pi \times 10^3$
$= 4188.7\ldots$
$= 4000\text{ cm}^3$ (1 sf) #