1. $56 - 24 = 32$

2.

Place Value	Thousands	Hundredths
Value	3000	0.04

3. $x = 45 + (\frac{2}{3} \times 45)$
$x = 45 + 30$
$x = 75$

4. $2\pi r = C$
$2 \times \frac{22r}{7} = 88m$
$7 \times \frac{44r}{7} = 88 \times 7$
$\frac{44r}{44} = \frac{88 \times 7}{44}$
$r = 14m$

5. The missing number $= 3^5 \div 3^3$
$= 3^{5-3}$
$= 3^2$

6. $50 \div \frac{1}{2}$
$= 50 \times 2$
$= 100$ kg

7. Note: $41957 = 41000 + 975$
975 is nearer to 1000 than 0
So, $41000 + 1000 = 42000$
Thus, $41957 \simeq 42000$

8.

1 line of folding symmetry

9. Capacity of the biggest container = GCF

2	60	72
2	30	36
3	15	18
	5	6

Capacity $= 2 \times 2 \times 3$
$= 12$ litres

10. 00 43 hours = 12:43 a.m.

11. $\frac{45}{75} \times 100\%$
$= 60\%$

12. No. of builders
$= \frac{8 \times 10}{5}$
$= 16$ builders

13. 1 min. = 60 seconds
Speed in m/s $= \frac{600m}{60s}$
$= 10$m/s

14. $2(m + 7)$

15. 0.1, 0.4, 0.7, 1.0, 1.3
$0.1 + 0.3 = 0.4$
$0.4 + 0.3 = 0.7$
$0.7 + 0.3 = 1.0$
$1.0 + 0.3 = 1.3$

16. The bearing of the school from the teacher's home
$= 180^0 + 075^0$
$= 255^0$

17. Note: $255^0 = 360^0 - 105^0$
To construct an angle of 255^0,
- Construct an angle of 105^0
- The adjacent explementary angle becomes 255^0

18. 1 kg = 1000 grammes
3.27 kg = 3.27kg
$= 3.27 \times 1000$g
$= 3270$g

19. $-8 - (-5)$
$= -8 + 5$
$= -3$

20. $5m - n$
$= (5 \times 3.2) - 7$
$= 16 - 7$
$= 9$

21. Total area for perimeter
$= 2(5+2)$
$= 2(7)$
$= 14$

Length $= \frac{5}{14} \times 280m = 100m$

Width $= \frac{2}{14} \times 280m = 40m$

Area = L X W
$= 100m \times 40m$
$= 4000m^2$

22a) Let son be x years old.
Father be (x + 20) years old.
In 10 years time:
Son will be: 2(x + 10) years old.
Father will be:
(x + 20) + 10 years old
$2(x + 10) = (x + 20 + 10)$
$2x + 20 = x + 30$
$2x + 20 - 20 = x + 30 - 20$
$2x = x + 10$
$2x - x = x - x + 10$
$x = 10$
The son is 10 years old.

b) Father will be:
$= (x + 20) + 10$ years
$= (10 + 20) + 10$ years
$= 40$ years

23 Interior angle sum
$= 180^0(n - 2)$
$= 180^0(5 - 2)$
$= 180^0 \times 3$
$= 540^0$
$(k+15^0)+(2k+13^0)+(3k+12^0)$
$+(4k+10^0)+80^0=540^0$
$10k + 50^0 = 540^0$
$10k + 50^0 - 50^0 = 540^0 - 50^0$
$\frac{10k}{10} = \frac{490^0}{10}$
$k = 49^0$

24.

Base, b	Height, h	Area, A
5cm	12cm	**30cm²**
6m	8m	24m²
7cm	**6cm**	21cm²

$A = \frac{1}{2}bh$

$= \frac{5cm \times 12cm}{2}$

$A = 30cm^2$

$b = \frac{2 \times A}{h}$

$b = \frac{2 \times 24}{8}$

$b = 6m$

$h = \frac{2 \times A}{b}$

$h = \frac{2 \times 21}{7}$

$b = 6cm$

The 38 to base three

3	38	Rem.
3	12	2
3	4	0
	1	1

$123_{five} = 1102_{three}$

28a) $P = \{21, 22, 22, 31\}$

$p = 2 \times 2 \times 2 \times 3$

$p = 24$

b) $Q = \{32, 33, 21, 22, 31\}$

$Q = 3 \times 3 \times 2 \times 2 \times 3$

$Q = 108$

c) LCM = Product of the union

$LCM = 2 \times 3 \times 3 \times 2 \times 2 \times 3$

$LCM = 216$

25a). R is a subset of Set P.

b). $Q' = \{2, 4, 6, 8, 10\}$

$R' = \{3, 4, 6, 8, 9, 10\}$

$(Q' \cap P') = \{4, 6, 8, 102, 3\}$

26. Surface area

$= 2(l \times w) + 2(l \times h) + 2(w \times h)$

$148 = 2(6 \times w) + 2(6 \times 4) + 2(w \times 4)$

$148 = 12w + 48 + 8w$

$148 = 20w + 48$

$148 - 48 = 20w + 48 - 48$

$\frac{100}{20} = \frac{20w}{20}$

$5 = w$

Width = 5cm

27. To change 123_{five} to base ten first,

$= (1 \times 5^2) + (2 \times 5^1) + (3 \times 5^0)$

$= (1 \times 5 \times 5 \times 5) + (2 \times 5) + (3 \times 1)$

$= 25 + 10 + 3$

$= 38_{ten}$

29. No. of boys

$= 60 - 25$

$= 35$ boys

Total marks for girls

$= 65 \times 25$

$= 1625$ marks

Total marks for boys

$= 50 \times 35$

$= 1750$ marks

Total marks

$= 1625 + 1750$

$= 3375$ marks

Mean mark for the class

$= 3375 \div 60$

$= 56\frac{1}{4}$ marks

30. Let the height of the smaller one be h,

Capacity = 300 ml

Height of the larger bottle = 12cm, capacity = 8100ml

$300 : h = 8100 : 12$

$\frac{300}{h} = \frac{8100}{12}$

$8100h = 300 \times 12$

$8100h = 3600$

$\frac{8100}{8100} \quad \frac{8100}{8100}$

$h = \frac{36}{81}$

$h = \frac{4}{9}cm$

31. Actual amount of money spent on school fees

$=$ Shs600,000 − Shs380,000

$=$ Shs220,000

Amount of money spent on the 1st child's school fees

$= \frac{6}{11} \times$ Shs220,000

$=$ Shs120,000

Amount of money spent on the 2nd child's school fees

$= \frac{2}{11} \times$ Shs220,000

$=$ Shs40,000

Amount of money spent on the 3rd child's school fees

$= \frac{3}{11} \times$ Shs220,000

$=$ Shs60,000

32. One monthly installment

$= \frac{20}{100} \times$ Shs120,000

$=$ Shs24,000

Total amount in installments

$=$ Shs24,000 x 5

$=$ Shs120,000

Hire purchase price

$=$ Shs24,000 + Shs120,000

$=$ Shs144,000

So, Martin paid less by:

Shs144,000 − Shs100,000

$=$ Shs44,000