ANSWER KEY

QUESTION	CORRECT ANSWER
1	A Given: Mickey mouse collected 15 kg in 10 days Solution: 15 kg = 10 days 1 day = $\frac{15}{10}$ 1 day = 1.5 kg or **1 ½ kg**
2	E Given: ⅓ meter Ribbon Cuts into 2 pieces Solution: $\frac{\frac{1}{3}}{2}$ = Length of each ribbon **Length of each ribbon = $\frac{1}{6}$ of a meter**
3	C Given: 3 ½ kg $12.20 per kg Solution: Pork = 3 ½ (12.20) **Pork = $42.70**
4	B Given: 3 kg of apples = $8.4 Solution: 3 kg of apple = $8.4 1 kg of apple = $\frac{8.4}{3}$ 1 kg of apple = $2.8 8 kg of apple = 2.8 (8) **8 kg of apple = $22.40**

5	D Given: 540 marbles Red = 20% Yellow = 45% Green = Rest Solution: Green = 100% - 20% - 45% Green = 35% Green = 0.35(540) **Green = 189 green marbles**
6	C Given: 48 widgets per hour ¾ hour = ? Solution: ¾ hour = ¾ (48) **¾ hour = 36 widgets**
7	B Given: 1 Dose = ⅛ (X) + ¾ (Y) 1 Dose = $\frac{1+6}{8}$ 1 Dose = $\frac{7}{8}$ milliliter Solution: Number of dose = $\frac{35}{\frac{7}{8}}$ **Number of dose = 40 doses**
8	E Given: 12 days = 30 cans Solution: 12 days = 30 cans 1 day = $\frac{30}{12}$ 1 day = 2 ½ cans **2 ½ cans per day**

9	A Given: 5 beams = 1 ½ tones Solution: 5 beams = 1 ½ tones 1 beam = $\frac{1.5}{5}$ tonnes **1 beam = 0.3 tonnes**
10	C Given: Old Wide = 3.8 meters New Wide = 2.5 as wide Solution: New = 3.8 (2.5) **New = 9.5 meters**
11	B Given: 9 books book = $5\frac{3}{10}$ cm Solution: Tall = $5\frac{3}{10}$ (9) **Tall = $47\frac{7}{10}$ centimeters**
12	D Given: Detergent = 3.45 Liters per batch 4 batches = ? Solution: 4 batches = 3.45 (4) **4 batches = 13.8 Liters**

13	B Given: L = 26 ⅔ cm Cuts into 3 pieces with the same length Solution: Length of each = $\frac{26\frac{2}{3}}{3}$ Length of each = $\frac{80}{3}$ x $\frac{1}{3}$ Length of each = $\frac{80}{9}$ **Length of each = 8 $\frac{8}{9}$ cm**
14	D Given: 4 bags of lemons 1 glass = ¼ bag of lemon Solution: 1 glass = ¼ bag of lemon 1 bag = (1)4 = 4 Glasses 4 bags = 4(4) **4 bags = 16 glasses**
15	A Given: 8.25 ml = 1 scoop 7 scoops = ? Solution: 7 scoops = 7 (8.25) **7 scoops = 57.75 ml**

16	E Given: 1 pack = $20\frac{3}{4}$ grams $3\frac{1}{2}$ pack = ? Solution: $3\frac{1}{2}$ pack = $(3\frac{1}{2})$ $(20\frac{3}{4})$ $3\frac{1}{2}$ pack = $(\frac{7}{2})(\frac{83}{4})$ $3\frac{1}{2}$ pack = $(\frac{7\ x\ 83}{8})$ 3 $\frac{1}{2}$ pack = $\frac{581}{8}$ **$3\frac{1}{2}$ pack = $72\frac{5}{8}$ grams**
17	B Given: L = 28.8 meters Cuts into 6 equal pieces Solution: Length of each = $\frac{28.8}{6}$ **Length of each = 4.8 meters**
18	A Given: Bert = 4(Ernie) Bert = 4 ⅓ bags Solution: Bert = 4(Ernie) Ernie = ¼ Bert Ernie = ¼ (4 ⅓) **Ernie = $1\frac{1}{12}$ bags**

19	D Given: 2.5 is how many times greater than 0.025 Solution: Times greater = $\frac{2.5}{0.025}$ **Times greater = 100**
20	C Given: ¼ Water = 10 minutes ½ hour or 30 mins Solution: W - ¼ W = ¾ W ← 1st 10 minutes ¾ W - (¼) (¾ W) = $\frac{9}{16}$W ← 2nd 10 minutes $\frac{9}{16}$W - (¼) ($\frac{9}{16}$ W) = $\frac{27}{64}$W ← 3rd 10 minutes Therefore the answer is **Choice C**
21	B Given: 8 members Total = 70 km Solution: Distance for each = $\frac{70}{8}$ **Distance for each = $8\frac{3}{4}$ km**
22	A Given: 9 days 1 pack of beef jerky 1 pack = ½ kg of beef jerky Solution: Beef jerky per day = $\frac{\frac{1}{2}}{9}$ **Beef jerky per day = $\frac{1}{18}$ of a kg**

23	B Given: Large = 1 hour Small = 2 hours Solution: **Work problem formula** **(1/T) = (1/t1) + (1/t2)** **Let T = time taken if both do the work together** **t1 = time taken by 1st person** **t2 time taken by 2nd person** $\frac{1}{T} = \frac{1}{1} + \frac{1}{2}$ $\frac{1}{T} = \frac{3}{2}$ **T = ⅔ of an hour**
24	E Given: Bubbles = ⅓ mini-mints Buttercup = ⅔ of remaining Blossom = ⅗ of remaining 8 mini-mints left on the bag Solution: Let M = number of mini mints M - ⅓ M = ⅔ M ← Remaining after he gave Bubbles ⅔ M - ⅔ (⅔)M = $\frac{2}{9}$M ← Remaining after he gave Buttercup $\frac{2}{9}$ M - $\frac{3}{5}$ ($\frac{2}{9}$)M = $\frac{4}{45}$M ← Remaining after he gave Blossom $\frac{4}{45}$M = 8 mini-mints 4M = 360 **M = 90 mini-mints**

25	D Given: ¼ Attendees = Less than 10 comic books ⅖ Attendees = more than 30 comics books Solution: Owns 10-30 comic book = 1 - ¼ - ⅖ Owns 10-30 comic book = $\frac{20-5-8}{20}$ **Owns 10-30 comic book = $\frac{7}{20}$**
26	B Given: Turkey sandwich = 54% Chocolate sundae = 32% Remaining = Soda = $9.24 Solution: 100% - 54% - 32% = 14% ← Remaining Let M = Money (0.14)(M) = 9.24 **M = $66**
27	B Given: Red = ½ Tokens Blue = ⅓ Remaining Green = 160 tokens Solution: Green = T - ½ T - ⅓ T Green = $\frac{6-3-2}{6}$T Green = ⅙ T 160 = ⅙ T T = 960 960 - (½)(960) = 480 ← Without the red tokens Blue tokens = 480(⅓) Blue tokens = 160 tokens Fraction = $\frac{160}{960}$ **Fraction = ⅙**

28	D Given: Diamonds = ⅓ gems Rubies = ½ remaining Sapphires = left Solution: G - ⅓ G = ⅔ G ← Remove the diamonds ⅔ G - (⅔ G)(½) = ⅓ G ← Remove the rubies or Sapphires **Sapphires = ⅓ of the gems**
29	A Given: $\frac{3}{20}$ is what percent of $\frac{1}{2}$ Solution: Percent = $\frac{\frac{3}{20}}{\frac{1}{2}}$ x 100 **Percent = 30%**
30	D Given: What fraction of $\frac{3}{8}$ is $\frac{1}{12}$ Solution: Fraction = $\frac{\frac{1}{12}}{\frac{3}{8}}$ **Fraction = $\frac{2}{9}$**
31	A Given: Food = $\frac{5}{8}$ of his earnings Bills = $\frac{1}{3}$ of remainder Saves = $80 Solution: Let M = weekly earnings M - ⅝ M = ⅜ M ← after paying the food ⅜ M - (⅓)(⅜)M = ¼ M ← after paying the bills ¼ M = 80 **M = $320**

32	B Given: 1st minute = $1.25 15 cents per minute after 13 minutes = ? Solution: Bill = 1.25 + (12)(0.15) **Bill = $3.05**
33	D Given: Total = 72 marbles A = 3D = ¾ C Solution: A + ⅓ A + (4/3) A = 72 (8/3) A = 72 A = 27 C = 4/3 A = (4/3) (27) = 36 D = ⅓ A = ⅓ (27) = 9 C - D = 36 - 9 = **27 marbles**

34	C
	Given:
	¼ Red apples and ⅔ of green apples = Bad
	Red = ⅔ Green
	Green = $\frac{3}{2}$Red
	Solution:
	Assume that there are 120 apples
	Total = Red + Green
	Total = Red + $\frac{3}{2}$ Red
	120 = (1 $\frac{3}{2}$) Red
	120 = ($\frac{5}{2}$) Red
	Red = 48 red apples
	Green = $\frac{3}{2}$ (48)
	Green = 72 green apples
	Bad = ¼ (48) + ⅔ (72)
	Bad = 60
	Not bad = 120 - 60
	Not bad = 60
	Fraction = $\frac{60}{120}$
	Fraction = ½

35	D Given: 1st shelves = ⅔ (2nd shelves) 1st cabinet per shelf has ⅚ as many bags as the 2nd cabinet per shelf Solution: Assume that there are 60 bags of candies Total bags = 1st + 2nd 1st number of bags = (⅚)(2nd)(⅔) 2nd number of bags = (2nd) (1) $60 = $ (⅚) (2nd)(⅔) $+ $ 2nd (1) $60 = \dfrac{5}{9}$ (2nd) $+$ 2nd $60 = \dfrac{14}{9}$(2nd) $(14)(2nd) = 540$ $2nd = \dfrac{270}{7}$ Fraction $= \dfrac{\frac{270}{7}}{60}$ **Fraction $= \dfrac{9}{14}$** **Alternate Solution** Since no exact values are given, and only fractional values, picking smart numbers work. If the second cabinet has 3 shelves, then the first cabinet has 2 shelves. If there are 6 bags per shelf in the second cabinet, then there are 5 bags per shelf in the first cabinet. Total number of bags in the first cabinet is 10, and the total number of bags in the second cabinet is 18. Totals bags = 28 Required fraction = 18/28 = 9/14

36	C Given: 17 meters cuts into 3 2nd piece = 1st - 2.2 meters 3rd = 1st + 3 meters Solution: Total = 1st + 2nd + 3rd 17 = 1st + (1st - 2.2) + (1st + 3) 17 = 3(1st) + 0.8 3(1st) = 16.2 **1st = 5.4 meters**

37		C Given: Green = ¼ Sold = ⅔ of the apples including ⅘ of the green apple Solution: Assume that there are 120 apples Green = 120(¼) Green = 30 green apples Sold = ⅔ (120) Sold = 80 apples Sold green apples = ⅘(30) Sold green apples = 24 green apples were sold Remaining apples = 120 - 80 Remaining apples = 40 apples Remaining green apples = 30 - 24 = 6 green apples Fraction = $\frac{6}{40}$ **Fraction = $\frac{3}{20}$** **Alternate Solution** Since no exact values are given, and only fractional values, picking smart numbers work. Pick a number that is LCM of 4, 3, and 5. LCM(4,3,5) = 60 Let number of apples in basket = 60 Number of green apples = 15, non-green = 45 Sold 2/3 of apples or 40 apples, including 4/5 of green apples (or 12 green apples) Remaining apples = 20, remaining green apples = 3 Required fraction = 3/20

38	D Given: Clothes = ¼ Money Bags = ⅔ remaining Left = $1 200 Solution: Let M = money M - ¼ M = ¾ M ← after buying cloth ¾ M - ⅔ (¾ M) = ¼ M ← after buying bags ¼ M = 1200 **M = $4800**
39	D Given: Girls = $\frac{5}{12}$ ¼ students are girls who can speak Italian Solution: Assume that there are 120 students Girls = $\frac{5}{12}$(120) Girls = 50 Girls who Speaks Italian = ¼ (120) Girls who Speaks Italian = 30 Fraction = $\frac{30}{50}$ **Fraction = $\frac{3}{5}$**

40	B Given: Perimeter = 26 cm $W = \frac{4}{9}(L)$ Solution: Perimeter = 2(L + W) $26 = 2(L + \frac{4}{9}L)$ $26 = 2L + \frac{8}{9}L$ $2\frac{8}{9}L = 26$ L = 9 cm $W = \frac{4}{9}(9)$ W = 4 Area = 9 x 4 **Area = 36 cm^2**