環蓓數學盃

小學五年級模擬試題(中文繁體版)

甲部 - 計算題:

1. $3\frac{4}{5} \div 2\frac{2}{3} =$
2. 0.125 × 8.8 = ?
3. 888 × 555 + 222 × 667 = ?
4. 5683 最少要加上多少, 才可被 8 整除?
5. 如果 22.8 - B = 15 , 那麼 5B 等於甚麼?

乙部 - 一般問題解決題目:

1. 一個圓形花壇的周長是 120 米, 如果每隔 6 米種一棵樹, 一共可以種多少棵樹?
2. 一個水果籃裡有 30 個水果:其中 6 個是蘋果, 每個重 $3\frac{1}{4}$ 公斤;10 個是橙子, 每個重 $\frac{1}{5}$ 公斤;剩下的都是香蕉, 每個重 $2\frac{1}{8}$ 公斤。這些水果的總重量是多少公斤?
3. 如果一個正方形的邊長為 (3y - 2) cm 而周界為 40 cm, 問 y 的值是多少?

丙部 -『全球暖化』主題的應用題:

1. 小明家為了響應節能減碳, 決定將家裡的傳統冰箱換成節能冰箱。傳統冰箱每天耗電 1.5 度, 節能冰箱每天耗電 0.5 度。如果每度電的價格是 2.5 元, 那麼更換節能冰箱後, 小明家每天可以節省多少電費?
2. 某公園為了推廣太陽能發電, 決定沿著湖邊安裝太陽能路燈。如果湖邊長500米, 每兩盞太陽能路燈間距25米, 且每盞太陽能路燈的造價為2000元, 那麼安裝這些太陽能路燈共需多少資金?
3. 一個學校為了減少能源消耗, 決定將部分教室的照明系統更換為LED燈。學校共有 240 間教室, 其中 $\frac{2}{3}$ 的教室需要更換照明系統, 需要更換的教室中有 42 間已經更換為LED燈, 其餘教室仍使用傳統燈管。如果每間更換為LED燈的教室每年可以節省電費 100 元, 那麼學校總共可以節省多少電費?

環蓓數學盃

小學五年級模擬試題(简体中文版)

甲部 - 计算题:

1. $3\frac{4}{5} \div 2\frac{2}{3} =$
2. 0.125 × 8.8 = ?
3. 888 × 555 + 222 × 667 = ?
4. 5683 最少要加上多少，才可被 8 整除？
5. 如果 22.8 - B = 15，那么 5B 等于什么？

乙部 - 一般问题解决题目:

1. 一个圆形花坛的周长是 120 米，如果每隔 6 米种一棵树，可以种多少棵树？
2. 一个水果篮里有 30 个水果:其中 6 个是苹果，每个重 $3\frac{1}{4}$ 公斤;10 个是橙子，每个重 $\frac{1}{5}$ 公斤;剩下的都是香蕉，每个重 $2\frac{1}{8}$ 公斤。这些水果的总重量是多少公斤？
3. 如果一个正方形的边长为 (3y - 2) 厘米，周长为 40 厘米，问 y 的值是多少？

丙部 - “全球暖化”主题的应用题:

1. 为了响应节能减碳，小明家决定将家里的传统冰箱换成节能冰箱。传统冰箱每天耗电 1.5 度，节能冰箱每天耗电 0.5 度。如果每度电的价格是 2.5 元，那么更换成节能冰箱后，小明家每天可以节省多少电费？
2. 某公园为了推广太阳能发电，决定沿着湖边安装太阳能路灯。如果湖边长 500 米，每两盏太阳能路灯间距 25 米，且每盏太阳能路灯的造价为 2000 元，那么安装这些太阳能路灯共需多少资金？
3. 一所学校为了减少能源消耗，决定将部分教室的照明系统更换为 LED 灯。学校共有 240 间教室，其中 $\frac{2}{3}$ 的教室需要更换照明系统。需要更换的教室中已有 42 间更换为 LED 灯，其余教室仍使用传统灯管。如果每间更换为LED灯的教室每年可以节省电费 100 元，那么学校总共可以节省多少电费？

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小學五年級模擬試題

答案與題解

甲部:

1. $1\frac{17}{40}$【題解:

步驟一:轉換為假分數	$3\frac{4}{5} = \frac{(3\times5+4)}{5} = \frac{19}{5}$ $2\frac{2}{3} = \frac{(2\times3+2)}{3} = \frac{8}{3}$
步驟二:除法變乘法	$(\frac{19}{5}) \div (\frac{8}{3}) = (\frac{19}{5}) \times (\frac{3}{8})$
步驟三:計算	$\frac{(19\times3)}{(5\times8)} = \frac{57}{40}$
步驟四:轉換回帶分數(如果需要)	$\frac{57}{40} = 1\frac{17}{40}$】

2. 1.1【題解:0.125 相當於 $\frac{1}{8}$, 因此 0.125 × 8.8 = $(\frac{1}{8})$ × 8.8 = $\frac{8.8}{8}$ = 1.1】
3. 640914【題解:

888 × 555 + 222 × 667 = 222 × 4 × 555 + 222 × 667 = 222 × 2220 + 222 × 667 = 222 × (2220 + 667) = 222 × 2887 = 640914】

4. 5【題解: 5683 ÷ 8 = 710.....3, 8 - 3 = 5】
5. 39【題解:

步驟一:求解 B	22.8 - B = 15 B = 22.8 - 15 B = 7.8
步驟二:求解 5B	5B = 5 × 7.8 5B = 39】

乙部:

1. 20【題解:120 ÷ 6 = 20 棵】
2. 51.25【題解:蘋果總重: 6 個蘋果 × $3\frac{1}{4}$ 公斤/個 = 6 × $\frac{13}{4}$ 公斤 = $\frac{78}{4}$ 公斤 = 19.5 公斤

   橙子總重: 10 個橙子 × $\frac{1}{5}$ 公斤/個 = $\frac{10}{5}$ 公斤 = 2 公斤

   香蕉數量: 30 個水果 - 6 個蘋果 - 10 個橙子 = 14 個香蕉

   香蕉總重: 14 個香蕉 × $2\frac{1}{8}$ 公斤/個 = 14 × $\frac{17}{8}$ 公斤 = $\frac{238}{8}$ 公斤 = 29.75 公斤

   水果總重: 19.5 公斤 (蘋果) + 2 公斤 (橙子) + 29.75 公斤 (香蕉) = 51.25 公斤】
3. 4【題解:正方形周長是 4 × (3y - 2) = 40, 12y - 8 = 40, 12y - 8 = 40, y = 4】

丙部:

1. 2.5【題解:每天節省電量 1.5 - 0.5 = 1 度, 每天節省電費 1 x 2.5 = 2.5 元】
2. 40000【題解:需要安裝太陽能路燈 $\frac{500}{25}$ + 1 = 21 盞, 共需資金 2000 x 21 = 42000元】
3. 16000【題解:需要更換照明系統的教室有 240 x $(\frac{2}{3})$ = 160 間, 每年可節省電費:160 間 × 100 元/間 = 16,000 元】

Green Bay Mathematics Cup

Grade 5 of Primary School - Mock Exam Questions（**English version**）

Section A - Calculation questions

1. $3\frac{4}{5} \div 2\frac{2}{3} =$
2. 0.125 × 8.8 = ?
3. 888 × 555 + 222 × 667 = ?
4. What is the minimum number that must be added to 5683 so that it is divisible by 8?
5. If 22.8 - B = 15, what is the value of 5B?

Section B - General problem-solving questions

1. A circular flower bed has a circumference of 120 meters. If a tree is planted every 6 meters, how many trees can be planted in total?
2. There are 30 pieces of fruit in a basket: 6 apples, each weighing $3\frac{1}{4}$ kilograms; 10 oranges, each weighing $\frac{1}{5}$ kilogram; and the remaining fruits are bananas, each weighing $2\frac{1}{8}$ kilograms. What is the total weight of all these fruits in kilograms?
3. If the side length of a square is (3y - 2) centimeters and the perimeter is 40 centimeters, what is the value of y?

Section C - "Global Warming" themed problem-solving questions

1. To promote energy saving and carbon reduction, Ming's family decided to replace their traditional refrigerator with an energy-efficient one. The traditional refrigerator consumes 1.5 kWh of electricity daily, while the energy-efficient model consumes only 0.5 kWh daily. If the price of electricity is 2.5 dollars per kWh, how much money can Ming's family save in electricity costs each day after the upgrade?
2. A park aims to promote solar energy by installing solar-powered street lamps along the lakeside. The lakeside is 500 meters long, and the street lamps are spaced 25 meters apart. If each solar street lamp costs 2000 dollars to install, what is the total cost for installing all the lamps?
3. To reduce energy consumption, a school plans to replace the lighting systems in some classrooms with LED lights. The school has 240 classrooms, and $\frac{2}{3}$ of them need new lighting. Out of these, 42 classrooms have already been replaced with LEDs, while the rest still use traditional fluorescent lights. If each classroom that is upgraded to LED saves 100 dollars in electricity costs annually, what is the total annual savings for the school?

Green Bay Mathematics Cup

Grade 4 of Primary School - Mock Exam Questions

Answers and Solutions

Section A:

1. $1\frac{17}{40}$ [Solution: Step 1: Convert to an improper fraction. $3\frac{4}{5} = \frac{(3 \times 5 + 4)}{5} = \frac{19}{5}$ $2\frac{2}{3} = \frac{(2 \times 3 + 2)}{3} = \frac{8}{3}$ Step 2: Change division to multiplication. $(\frac{19}{5}) \div (\frac{8}{3}) = (\frac{19}{5}) \times (\frac{3}{8}) = \frac{(19 \times 3)}{(5 \times 8)} = \frac{57}{40} = 1\frac{17}{40}$
2. 1.1 [Solution: 0.125 is equivalent to $\frac{1}{8}$, so $0.125 \times 8.8 = \frac{1}{8} \times 8.8 = \frac{8.8}{8} = 1.1$]
3. 640914 [Solution: 888 × 555 + 222 × 667 = 222 × 4 × 555 + 222 × 667 = 222 × 2220 + 222 × 667 = 222 × (2220 + 667) = 222 × 2887 = 640914]
4. 5 [Solution: 5683 ÷ 8 = 710.....3, 8 - 3 = 5]
5. 39 [Solution:

Step 1: Solve B	22.8 - B = 15 B = 22.8 - 15 B = 7.8
Step 2: Find the value of 5B	5B = 5 × 7.8 5B = 39]

Section B:

1. 20 [Solution: Number of trees = $\frac{Total\ circumference}{Distance\ between\ trees} = \frac{120\ m}{6\ m}$ = 20 trees]
2. 51.25 [Solution: Apples: $6 \times 3\frac{1}{4} = 6 \times \frac{13}{4} = \frac{78}{4}$ = 19.5 kg.Oranges: $10 \times \frac{1}{5} = \frac{10}{5}$ = 2 kg. Bananas: $14 \times \frac{17}{8} = \frac{14\ x\ 17}{8} = \frac{238}{8}$ = 29.75 kg. Total weight: 19.5 + 2 + 29.75 = 51.25 kg]
3. 4 [Solution: Perimeter of a square = 4 × side length = 4 × (3y - 2) = 40, 12y - 8 = 40, 12y = 48, y = $\frac{48}{12}$, y = 4]

Section C:

1. 2.5 [Solution: Daily savings in electricity consumption: 1.5 kWh - 0.5 kWh = 1.0 kWh Cost savings per day: 1.0 kWh × 2.5 dollars/kWh = 2.5 dollars]
2. 40000 [Solution: Number of lamps: $\frac{Total\ length}{spacing} = \frac{500\ meters}{25\ meters}$ = 20 lamps. Total cost: 20 lamps × 2000 dollars = 40000 dollars]
3. 16000 [Solution: Number of classrooms needing replacement: $\frac{2}{3} \times 240 = 160$ classrooms. Remaining classrooms to be replaced: 160 - 42 = 118 classrooms. Total annual savings: (118 classrooms + 42 already replaced) = 160 classrooms. Total savings: 160 classrooms × 100 dollars/classroom = 16000 dollars]