



MathConcept

2024

P5

Question Booklet

問題簿

Time: 50 Minutes

Calculators are NOT permitted.

Instructions:

- 1. DO NOT OPEN THIS QUESTION BOOKLET UNTIL YOU ARE TOLD TO DO SO.**
- 2. If the information printed on your answer sheet is not correct, please inform the invigilator immediately.**
- 3. Please use a pencil and write your answers neatly ONLY on the answer sheet provided. DO NOT write or draw in the circle next to each answer box. No mark will be given if you failed to follow this instruction.**
- 4. Unless otherwise specified, all answers must be in exact value and in its simplest form. Writing the units for the answers is NOT necessary.**
- 5. Rough-work sheets provided will be collected at the end of the contest but they will not be marked.**
- 6. Diagrams in this question booklet are not necessarily drawn to scale.**

限時：50 分鐘

不允許使用計算機。

比賽須知：

- 1. 未宣布開始前，切勿翻閱此問題簿。**
- 2. 請核對答題紙上列出的資料是否與你相符。如有問題，請舉手。**
- 3. 所有答案必須寫在答題紙內，並須用鉛筆作答。請勿填寫或畫花題號後方的圓圈，否則該題答案將會作廢。**
- 4. 除非題目特別表明，所有答案均不需填寫單位，但必須以準確數值及最簡方式表示。**
- 5. 比賽完結時監考員會收回桌上的草稿紙，但草稿紙上所書寫的任何文字或圖表將不獲評閱。**
- 6. 此問題簿的附圖不一定依比例繪成。**

For question 1 to 10, the answers must be expressed in integer or decimal.

由第 1 至 10 題，答案必須以整數或小數表示。

1) $125 \times 48 = ?$ [1%]

2) $357 \div 21 = ?$ [1%]

3) $(750 - 525 \div 25) - 5 = ?$ [1%]

4) $26 \times (545 - 219 \times 2) = ?$ [1%]

5) $3.37 + 18.3 = ?$ [1%]

6) $66.8 - 8.66 = ?$ [1%]

7) $30730 \times 0.001 = ?$ [1%]

8) $440 \times 0.03 = ?$ [1%]

9) $27.4 \times 0.25 = ?$ [1%]

10) $4.8 \times 0.11 \times 15 = ?$ [1%]

For question 11 to 15, the answers must be expressed in proper fraction, integer or mixed number.

由第 11 至 15 題，答案必須以真分數、整數或帶分數表示。

11) Evaluate $2\frac{5}{8} + \frac{7}{12} - 1\frac{3}{4}$.

[1%]

計算 $2\frac{5}{8} + \frac{7}{12} - 1\frac{3}{4}$ 。

12) Evaluate $16 \times 2\frac{1}{12}$.

[1%]

計算 $16 \times 2\frac{1}{12}$ 。

13) Evaluate $3\frac{2}{21} \div \frac{10}{49}$.

[1%]

計算 $3\frac{2}{21} \div \frac{10}{49}$ 。

14) Evaluate $\frac{11}{15} \times 21 \div 2\frac{4}{5}$.

計算 $\frac{11}{15} \times 21 \div 2\frac{4}{5}$ 。

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15) Evaluate $3\frac{1}{9} \div \left(3\frac{1}{16} - 1\frac{3}{4}\right)$.

計算 $3\frac{1}{9} \div \left(3\frac{1}{16} - 1\frac{3}{4}\right)$ 。

[1%]

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- 16) At least how much should be added to 997 755 to give a 7-digit number? [2%]

997 755 最少要加上多少才可變成一個七位數？

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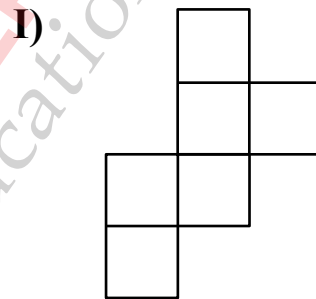
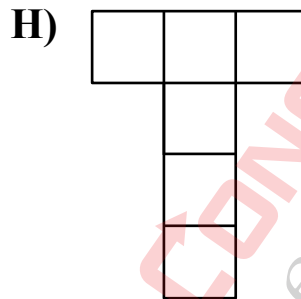
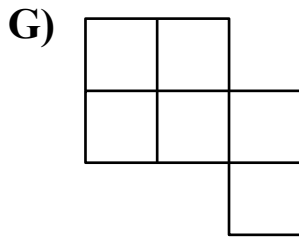
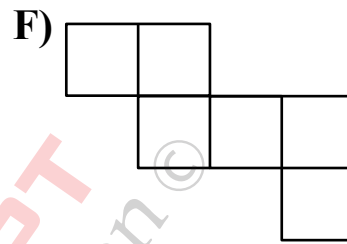
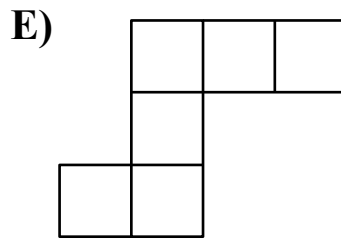
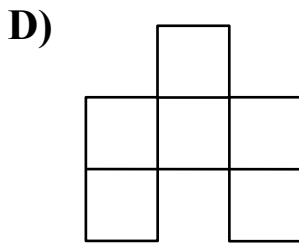
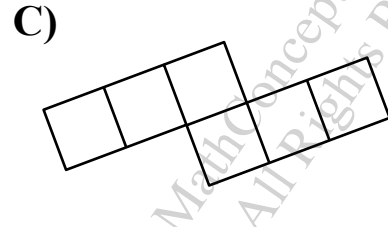
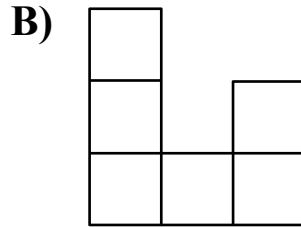
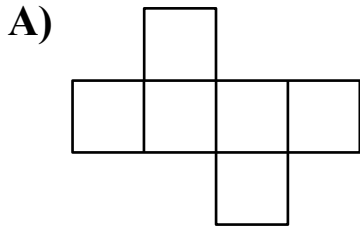
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- 17) John has $(N + 5)$ books and Patrick has $(24 - N)$ books. If John has 16 books, how many books does Patrick have? [2.1%]

小智有書 $(N + 5)$ 本，而小茂有書 $(24 - N)$ 本。如果小智有書 16 本，小茂有書多少本？

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18) Which of the followings are nets of a cube? List all answers. [2.2%]

下列哪些是正方體的摺紙圖樣？列出所有答案。



19) There are 800 balls in a box. The balls are coloured in red, blue and yellow. Half of all the balls are red and 0.35 of all the balls are yellow. How many balls are blue? [2.3%]

盒內有紅、藍、黃三種顏色的球，共 800 個。所有球中，有一半是紅色，而 0.35 是黃色。藍色的球有多少個？

- 20) The base and height of a parallelogram are $15\frac{5}{8}$ cm and $22\frac{2}{5}$ cm [2.4%]
respectively. What is its area in cm^2 ?

平行四邊形的底和高分別是 $15\frac{5}{8}$ 厘米和 $22\frac{2}{5}$ 厘米，它的面積
是多少平方厘米？

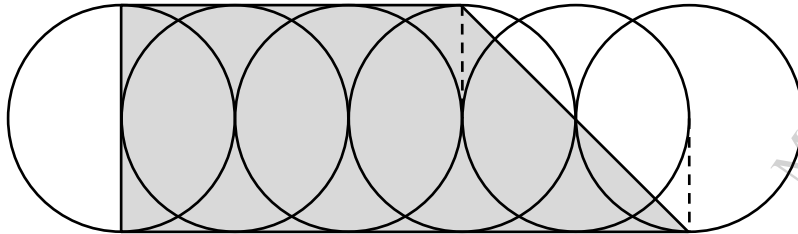
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- 21) There are a dozen brownies weighing $333\frac{1}{3}$ g in total. If Fion eats [2.5%]
 $3\frac{1}{5}$ brownies and Jennifer eats $2\frac{1}{2}$ brownies, how many brownies
will be left?

有一打布朗尼，共重 $333\frac{1}{3}$ 克。如果若琳吃了 $3\frac{1}{5}$ 件，而寶兒
吃了 $2\frac{1}{2}$ 件，還餘下布朗尼多少件？

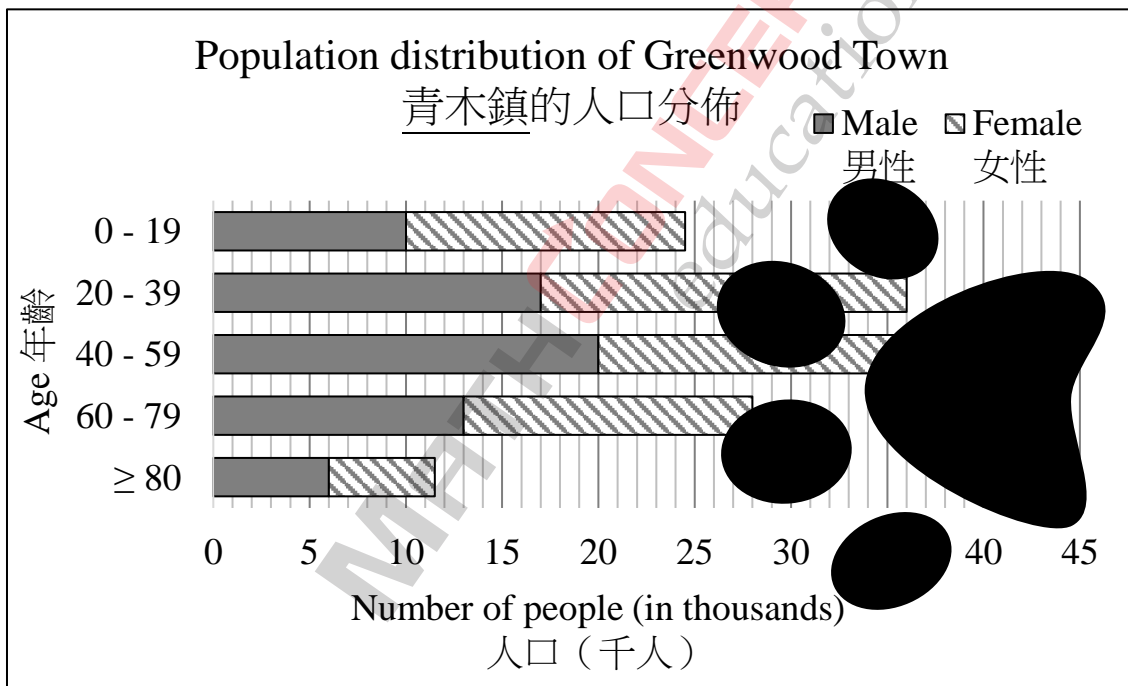
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- 22) In the figure, the radii of the circles are 5 cm. Find the area of the trapezium in cm^2 . [2.6%]

圖中所有圓的半徑都是 5 厘米。梯形的面積是多少平方厘米？



- 23) [2.7%]

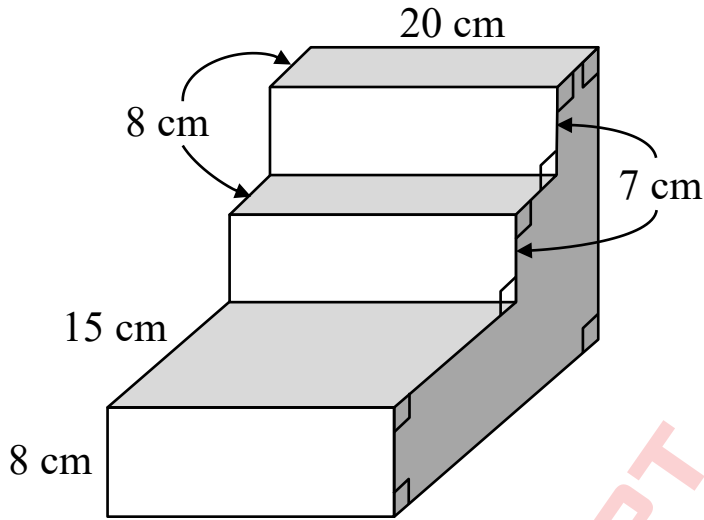


In Greenwood Town, the ratio of the number of males to that of females is $\frac{6}{7}$. According to the chart above, how many people are females aged 40 or above?

青木鎮的男性人數和女性人數之比是 $\frac{6}{7}$ 。根據以上圖表，40 歲或以上的女性有多少人？

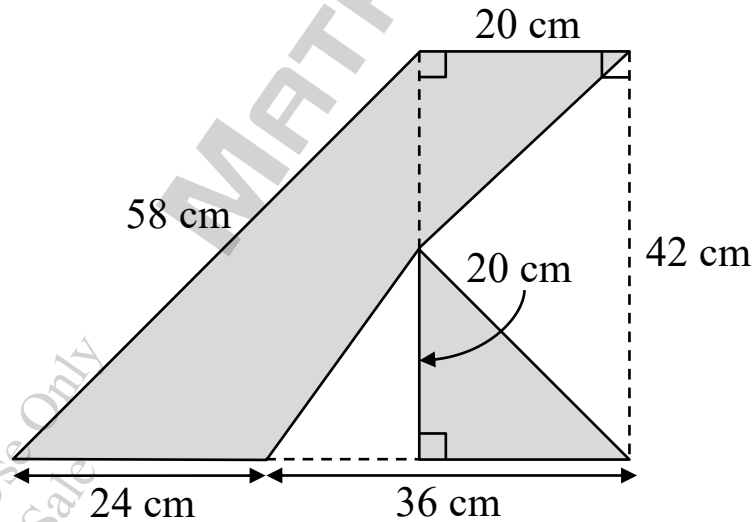
24) What is the volume of the prism below in cm^3 ? [2.8%]

以下柱體的體積是多少立方厘米？



25) Find the area of the shaded part of the figure in cm^2 . [2.9%]

圖中陰影部分的面積是多少平方厘米？



- 26) An apple costs 5 dollars 80 cents, which is \$27.90 cheaper than 1 kg of grapes. How much is 890 g of grapes in dollars? [3%]
(Give your answer correct to 1 decimal place)

一個蘋果售 5 元 8 角，比一公斤的葡萄便宜 27.9 元。890 克的葡萄售多少元？

(答案取至一位小數)

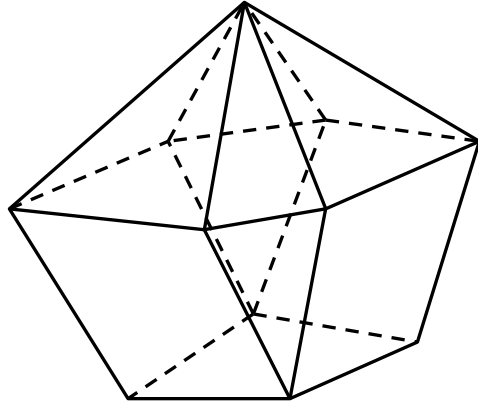
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- 27) The net of a cuboid is formed by squares and rectangles. The areas of two of the faces are 36 cm^2 and 9 cm^2 respectively. Find the smallest possible volume of the cuboid in cm^3 . [3.1%]

某長方體的摺紙圖樣是由正方形和長方形組成。其中兩個面的面積分別是 36 平方厘米和 9 平方厘米。長方體的最小體積是多少立方厘米？

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- 28) What is the difference between the numbers of edges of the following 3-D shape and a pentagonal pyramid? [3.2%]

以下立體圖形和一個五角錐的稜的數目之差是多少？



- 29) The area of a triangle is $6\frac{7}{19}$ m². If its height is $\frac{44}{57}$ m, how long is its corresponding base in metres? [3.3%]

三角形的面積是 $6\frac{7}{19}$ 平方米。如果它的高是 $\frac{44}{57}$ 米，對應的底是多少米？

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- 30) The total area of all the faces of a cube is 96 m^2 . At most how many [3.4%]
cuboids with length 25 cm, width 10 cm and height 0.5 m can be
cut from the cube?

立方體所有面的總面積是 96 平方米。該立方體最多可以被分
割成多少個長 25 厘米、闊 10 厘米和高 0.5 米的長方體？

-
- 31) Jeff and Hilda are talking about their ages. [4%]
Jeff says, '2 years ago, my age was 3 times that of Hilda.'
Hilda says, '3 years later, the age of Jeff will be twice of mine.'
What is their total age this year?

小俊和小佩正談論他們的年齡。

小俊說：「2年前，我的年齡是小佩的3倍。」

小佩說：「3年後，小俊的年齡是我的兩倍。」

今年兩人共多少歲？

- 32) Cutting a square from a rectangular paper decreased its perimeter [4.1%]
by 3.6 m. Then cutting another square from the remaining part of
the paper decreased its perimeter by another 60 cm. What was the
original area of the rectangular paper in cm^2 ?

從一張長方形紙中剪出一個正方形，紙張的周界減少 3.6 米；
然後從紙張餘下的部分中剪出另一個正方形，紙張的周界再減
少 60 厘米。原來長方形紙的面積是多少平方厘米？

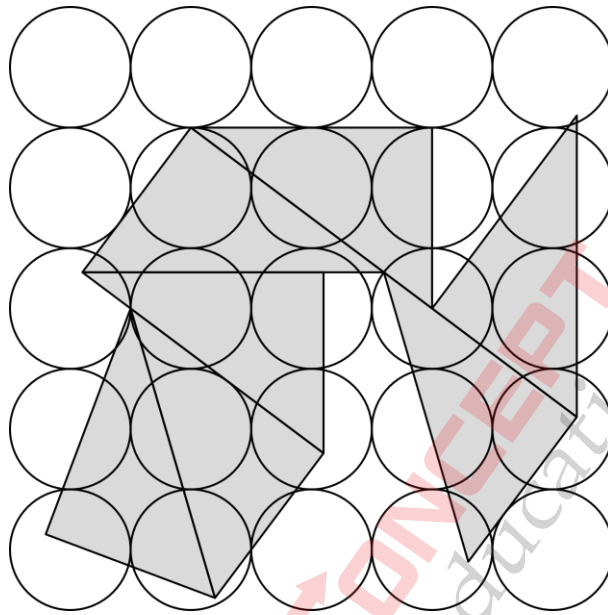
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- 33) There is a cuboid of length 5 m, width 4 m and height 3 m. Its [4.2%]
surface is painted, then it is cut into cubes of side length 0.25 m.
What fraction of the cubes are completely unpainted cubes?

把一個長 5 米、闊 4 米、高 3 米的長方體的表面塗上顏料，然
後把它分割為若干個邊長是 0.25 米的立方體。完全沒有塗上顏
料的立方體佔全部立方體的幾分之幾？

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- 34) The figure below shows 7 identical right-angled triangles and some circles with diameter 4 cm. What is the perimeter of the shaded region in cm? [4.3%]

下圖是 7 個大小相同的直角三角形和一些直徑是 4 厘米的圓。陰影部分的周界是多少厘米？

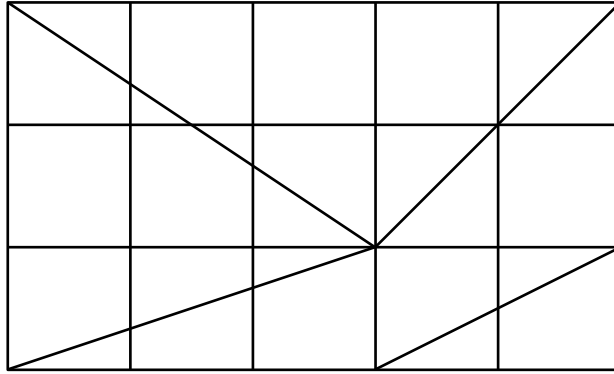


- 35) Find the remainder when 123 456 123 456 789 is divided by 33. [4.4%]
- 求 123 456 123 456 789 除以 33 的餘數。

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36) In the figure below, how many triangles are there? [4.5%]

下圖共有多少個三角形？



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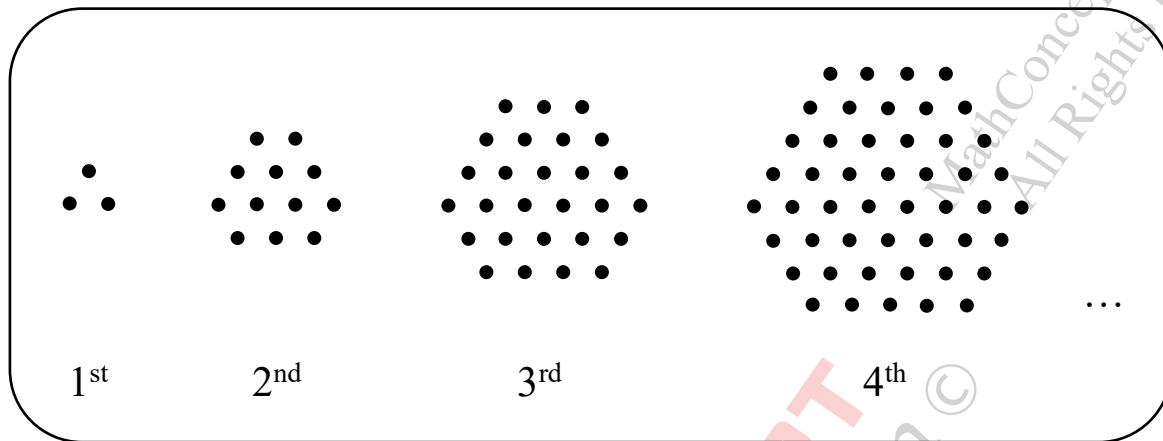
37) N is an integer. Given that there are 80 zeros at the end of the product of all integers from 1 to N (including 1 and N). Find the largest possible value of N . [4.6%]

N 是一個整數。已知由 1 至 N (包括 1 和 N) 所有整數之積的末尾有 80 個零。求 N 的最大可能值。

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- 38) According to the pattern, how many dots are there in the 17th figure? [4.7%]
figure?

根據規律，第 17 組圖案有多少粒圓點？



- 39) N is an integer. The sum of the 2 largest factors of N is 1012. Find the smallest possible value of N . [4.8%]

N 是一個整數。 N 最大的 2 個因數之和是 1012。 求 N 的最小可能值。

40) Agent Twilight tries to download a secret file in a company, but he [4.9%]
needs a password to access its security system. According to the
following clues, find the password.

- The password is the sum of three numbers.
- The three numbers are 3-digit numbers without digit '0'.
- The H.C.F. and L.C.M of the three numbers are 1 and 21 321 000 respectively.

特工黃昏試圖在一間公司內下載一份秘密文件，但他需要密碼
來進入它的保安系統。根據以下線索，找出該密碼。

- 該密碼是三個數之和。
- 這三個數都是不含數字「0」的三位數。
- 這三個數的最大公因數和最小公倍數分別是 1 和 21 321 000。

End of paper
全卷完

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REG NO			P5
NAME			
GRADE			
SEAT			

ANSWER SHEET

IDCHECK

ABSENT

ANSWER		ANSWER		ANSWER		ANSWER	
1	6000	11	$1\frac{11}{24}$	21	$6\frac{3}{10} / \frac{63}{10}$ /6.3	31	24
2	17	12	$33\frac{1}{3}$	22	200	32	37800
3	724	13	$15\frac{1}{6}$	23	43500	33	$\frac{21}{32}$
4	2782	14	$5\frac{1}{2}$	24	8320	34	84
5	21.67	15	$2\frac{10}{27}$	25	1100	35	24
6	58.14	16	2245	26	30.0	36	31
7	30.73	17	13	27	54	37	329
8	13.2	18	A, C, F, H, I	28	12	38	867
9	6.85	19	120	29	$16\frac{1}{2} / \frac{33}{2}$ /16.5	39	759
10	7.92	20	350	30	5120	40	1236

