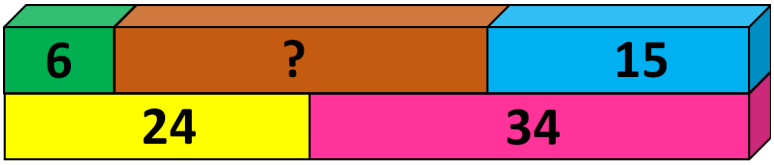
1 In the figure below, the numbers in each block represent the horizontal length of each block.



What is the length of the orange block?

A 34

B 35

C 36

D 37

E 38

2 Emma baked 10 trays of chocolate chip cookies and 8 trays of vanilla cookies for the school bake sale.

There are **c** cookies in each tray.

Which of these expressions gives the total number of cookies Emma baked for the school bake sale?

A $(10 + 8) \times \mathbf{c}$

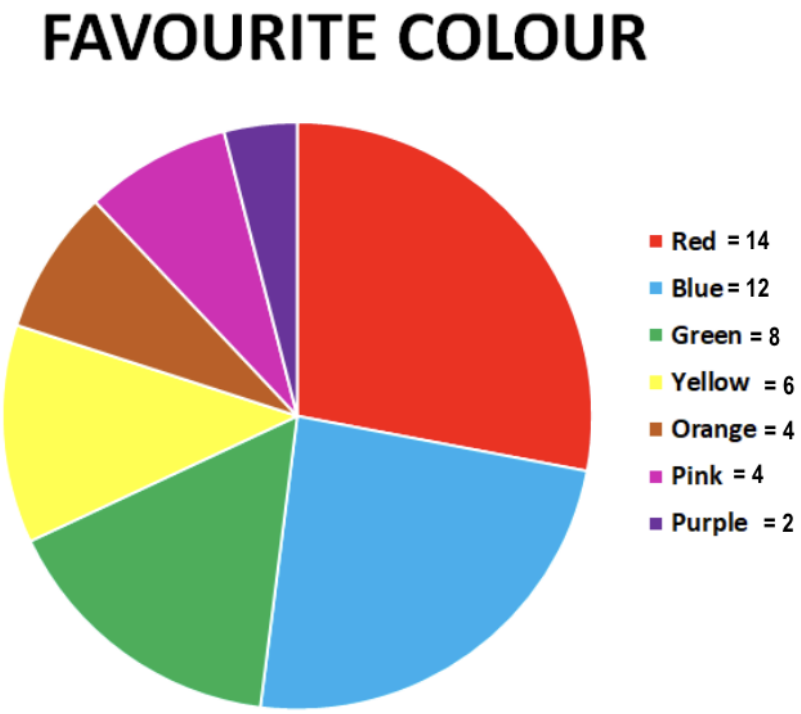
B $10 + 8 \times \mathbf{c}$

C $10 + (8 \times \mathbf{c})$

D $(10 \times \mathbf{c}) + 8$

E $\mathbf{c} + (10 \times 8)$

3 The pie chart below shows the result of a survey conducted on a group of 50 to find out their favourite colour.



What fraction of the students surveyed picked “blue” as their favourite colour?

A $\frac{7}{25}$

B $\frac{6}{25}$

C $\frac{5}{25}$

D $\frac{4}{25}$

E It cannot be determined.

4 A chef had 12 litres of milk.

The chef used $\frac{1}{8}$ of the milk to make vanilla cakes and another $\frac{1}{4}$ of the milk to make chocolate cakes.

How many litres of milk did the chef use to make the vanilla and chocolate cakes?

A $4\frac{1}{5}$ litres

B $4\frac{1}{4}$ litres

C $4\frac{2}{5}$ litres

D $4\frac{1}{2}$ litres

E $4\frac{3}{5}$ litres

5 Which of the following is equivalent to ten thousand?

A One-hundredth of a million

B One-tenth of a million

C One thousand ones

D One hundred thousand tens

E One hundred thousand hundreds

6 Mel went to the local post office and bought 8 rolls of stamps.

There are **s** stamps in each roll.

If Mel used 7 stamps from each roll, which of these expressions shows the total number of stamps left?

A $\mathbf{s} - (8 \times 7)$

B $8 \times \mathbf{s} - 7$

C $8 \times (7 - \mathbf{s})$

D $(8 \times \mathbf{s}) - 7$

E $8 \times (\mathbf{s} - 7)$

7 Jake filled a box with some toy blocks.

The toy blocks were arranged in a way that there were no gaps between toy blocks.

There were 8 layers of toy blocks, and each layer had 6 rows of 10 blocks.

If each toy block had a volume of 1 cubic centimetre, what is the volume of the box that Jake filled?

A 400 cubic centimetres

B 440 cubic centimetres

C 480 cubic centimetres

D 520 cubic centimetres

E 560 cubic centimetres

8 Sylvia started preparing dinner at exactly 6:40 P.M.

If it took her $1\frac{1}{4}$ hours to finish preparing dinner, what time did she finish preparing dinner?

A 6:45 P.M.

B 7:55 P.M.

C 7:45 P.M.

D 7:30 P.M.

E 7:25 P.M.

9 A basketball game lasted for 60 minutes.

Romeo played for a duration of $\frac{1}{5}$ of the first quarter of the game, $\frac{3}{5}$ of the second quarter, $\frac{2}{5}$ of the third quarter, and $\frac{4}{5}$ of the last quarter.

How many minutes did Romeo play in the basketball game?

A 9 minutes

B 18 minutes

C 21 minutes

D 24 minutes

E 30 minutes

10 Carla measures the length of five caterpillars she found in her garden.

The table below shows the length of each caterpillar.

TYPE	LENGTH
Black swallow caterpillar	8.162 centimetres
Cabbage white caterpillar	8.261 centimetres
Emperor caterpillar	8.126 centimetres
Monarch caterpillar	8.621 centimetres
Tiger swallow caterpillar	8.216 centimetres

Which caterpillar was the shortest in length?

A Black swallow caterpillar

B Cabbage white caterpillar

C Emperor caterpillar

D Monarch caterpillar

E Tiger swallow caterpillar

11 Althea estimated the length of the garden hose by rounding the actual length to the nearest tenth.

If her estimate for the length of the garden hose was 4.3 metres, which of the following could be the actual length of the garden hose?

A 4.21 metres

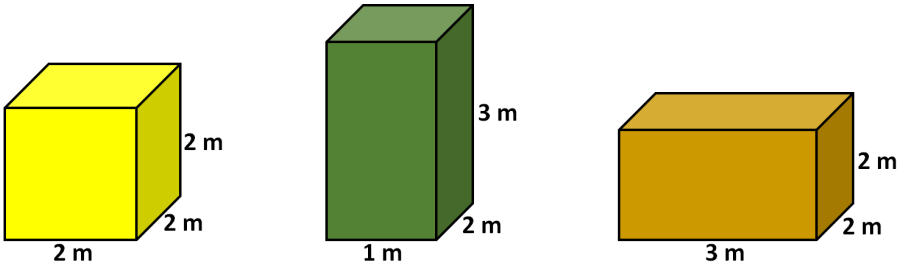
B 4.23 metres

C 4.25 metres

D 4.35 metres

E 4.38 metres

12 The figures below show the dimensions of three rectangular water tanks.



WATER TANK A **WATER TANK B** **WATER TANK C**

Which of these water tanks has a volume of more than 10 cubic metres?

A Water tank A only

B Water tank B only

C Water tank C only

D Water tanks A and B only

E Water tanks B and C only

13 Joan did a survey among her classmates about their favourite winter sport.

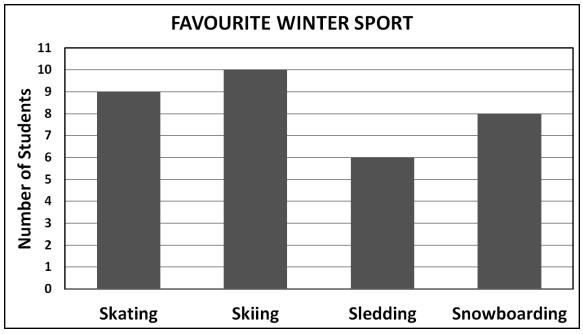
She recorded the responses of her classmates in the tally table below.

WINTER SPORT	TALLY
Skating	𝍸 ||||
Skiing	𝍸 𝍸
Sledding	𝍸 |
Snowboarding	𝍸 |||

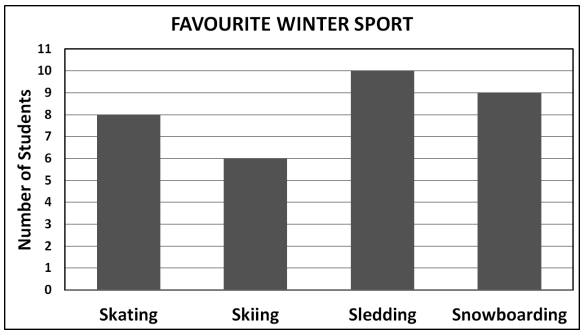
Then, she made a bar graph using the data she collected.

Which of the following could be the bar graph that Joan created?

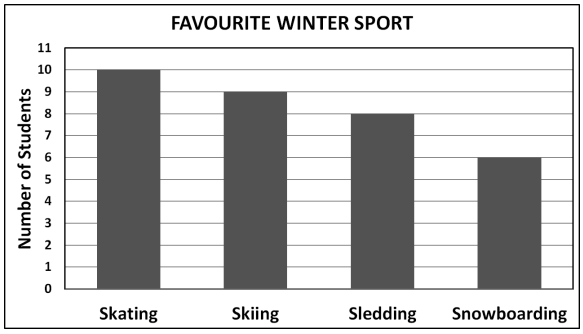
A



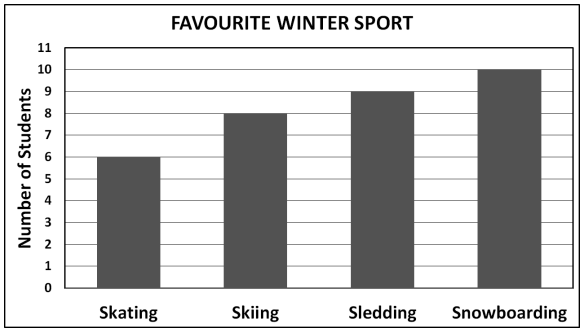
B



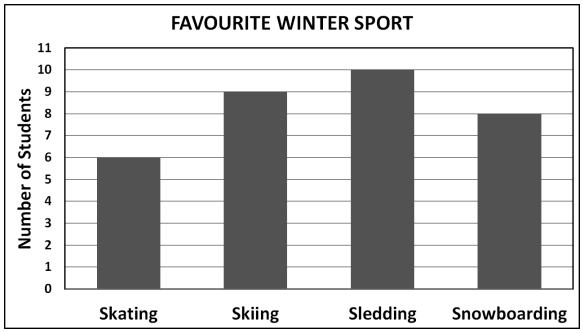
C



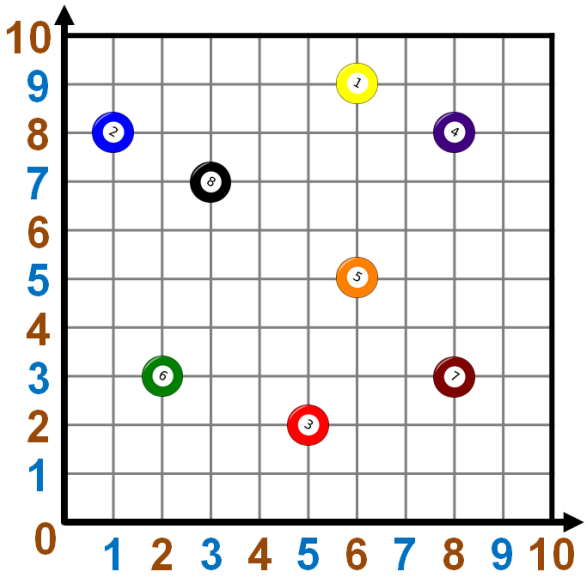
D


FAVOURITE WINTER SPORT
Number of Students
11
10
9
8
7
6
5
4
3
2
1
0
Skating
Skiing
Sledding
Snowboarding

E


FAVOURITE WINTER SPORT
Number of Students
11
10
9
8
7
6
5
4
3
2
1
0
Skating
Skiing
Sledding
Snowboarding

14 The coordinate plane below shows the locations of eight billiard balls in the table.



What are the coordinates of the location of the number **8** ball?

A (3, 3)

B (3, 7)

C (3, 8)

D (7, 3)

E (7, 7)

15 Peter works as a sales agent.

In any given week, he gets a commission equivalent to $\frac{1}{10}$ of his total weekly sales.

If Peter made a total weekly sales of $24 500 last week, how much commission did he receive last week?

A $245

B $254

C $2 400

D $2 450

E $2 500

16 Charlotte, Gerald, and Terry ordered a large pizza.

Charlotte ate **s** slices of pizza, Gerald ate 2 more slices than Charlotte, and Terry ate 3 fewer slices than Gerald.

In terms of **s**, how many slices did the three of them eat altogether?

A **s** – 2

B **s** + 1

C 3**s** – 2

D 3**s** – 1

E 3**s** + 1

17 An appliance store sells vacuum cleaners for $240 each.

If the appliance store wanted to increase the price of vacuum cleaners to $300, by how many percent should they increase the price?

A 20 percent

B 22 percent

C 25 percent

D 40 percent

E 60 percent

18 Two groups of students were collecting empty bottles for recycling.

The two students in the first group collected an average (arithmetic mean) of 75 empty bottles per student.

The three students in the second group collected an average of 100 empty bottles per student.

What is the average number of empty bottles collected per student of all the students in the two groups?

A 75 empty bottles

B 85 empty bottles

C 87 empty bottles

D 90 empty bottles

E 100 empty bottles

19 There are 20 coconut trees on Uncle John's farm.

Ten coconut trees each have a height of 8 metres, 6 coconut trees each has a height of 15 metres, and the 4 tallest coconut trees all have the same height.

If the average (arithmetic mean) height of the 20 coconut trees on Uncle John's farm is 17.5 metres, what is the height of each of the 4 tallest coconut trees?

A 25 metres

B 30 metres

C 35 metres

D 40 metres

E 45 metres

20 A box contains red or blue tokens only.

There are 3 red tokens for every 2 blue tokens in the box.

If there are 350 tokens in the box, how many more red tokens than blue tokens are there in the box?

A 70 tokens

B 140 tokens

C 210 tokens

D 280 tokens

E 350 tokens

21 The 10 machines at the factory can make widgets that range from 340 widgets per hour to 1 500 widgets per hour.

The average (arithmetic mean) number of widgets per hour the 10 machines can make is 600 widgets.

If the machine that makes the most number of widgets per hour and the machine that makes the least number of widgets per hour are excluded, what is the average number of widgets per hour the remaining 8 machines can make?

A 410 widgets

B 470 widgets

C 520 widgets

D 610 widgets

E 750 widgets

22 A hardware store sells screwdrivers for $4 each.

However, during a sale, the price of screwdrivers was reduced to 3 screwdrivers for $10.

How much money would be saved from purchasing 30 screwdrivers during the sale?

A $10

B $15

C $20

D $25

E $30

23 Derek is 10 years older than Allan, and Randolf is twice as old as Derek.

If the sum of the ages of Allan, Derek, and Randolf is 70, how old is Allan?

A 5 years old

B 8 years old

C 10 years old

D 20 years old

E 40 years old

24 At the wizard shop, a customer can buy 13 bottles of healing potion for **g** golds.

If each bottle of healing potion costs the same, how much will it cost a customer who buys 10 bottles of healing potion?

A 130**g** golds

B $\frac{130}{g}$ golds

C $\frac{13}{10g}$ golds

D $\frac{10g}{13}$ golds

E $\frac{g}{130}$ golds

25 Karl's age is 4 years more than twice Amy's age, and Amy is 3 years younger than Ruby.

If Ruby is **R** years old, how old is Karl in terms of **R**?

A $\frac{R-7}{2}$ years old

B $\frac{R-2}{2}$ years old

C $\frac{2R+7}{2}$ years old

D (2**R** – 2) years old

E (2**R** + 7) years old

26 In a certain snack stall, a cup of soda costs 50 cents and a turkey sandwich costs $1.25.

If Henry has $12.80 and he buys a cup of soda, what is the greatest number of turkey sandwiches he can buy?

A 8 turkey sandwiches

B 9 turkey sandwiches

C 10 turkey sandwiches

D 11 turkey sandwiches

E 12 turkey sandwiches

27 At the local hardware store, a customer can buy lightbulbs at a wholesale price of $72 for 80 light bulbs.

If a customer just buys one lightbulb, it will cost him $1.25.

How much above the wholesale price per light bulb will a customer pay if he just buys one lightbulb?

A 35 cents

B 38 cents

C 40 cents

D 42 cents

E 45 cents

28 Bea's monthly telephone plan includes a fixed monthly fee of $25 and a variable cost depending on the number of long-distance calls she made.

If Bea made 10 long-distance calls in a month, her monthly telephone bill would be $65.

How much will Bea's monthly telephone bill be if she makes 20 long-distance calls in a month?

A $80

B $90

C $105

D $125

E $130

29 While watching a movie, Jim bought a cup of soda and a large bucket of popcorn for $12.

If the large bucket of popcorn costs $11 more than the cup of soda, how much did the cup of soda cost?

A $0.50

B $1.00

C $1.50

D $6.00

E $11.00

30 In March, the total production of a steel factory was 15 percent more than the total production in April.

The total production of the steel factory in May was 1 200 metric tonnes of steel, which was 20 percent less than the total production in April.

How many metric tonnes of steel did the steel factory produce in March?

A 850 metric tonnes

B 1 150 metric tonnes

C 1 275 metric tonnes

D 1 500 metric tonnes

E 1 725 metric tonnes

31 The length of a rectangular box is 20 centimetres.

The width of the box is 35 percent less than its length, and the height is 25 percent more than its length.

What is the volume of the box?

A 6 500 cubic centimetres

B 6 000 cubic centimetres

C 5 500 cubic centimetres

D 5 000 cubic centimetres

E 10 750 cubic centimetres

32 The average (arithmetic mean) length of 10 wooden boards increased by $1\frac{1}{2}$ metres when the wooden board with a length of 68 metres was replaced by a new one.

What was the length of the new wooden board that replaced the one with a length of 68 metres?

A 74 metres

B 77 metres

C 78 metres

D 83 metres

E 89 metres

33 Kendra only has 5-dollar, 10-dollar, and 20-dollar bills in her purse.

She has 4 times as many 5-dollar bills as 10-dollar bills, and 2 fewer 20-dollar bills as 5-dollar bills.

If the total amount of money Kendra has in her purse is $290, how many 20-dollar bills does she have?

A 18

B 16

C 13

D 10

E 9

34 When flying, a hummingbird burns 16 calories in 10 seconds.

At this rate, how many calories does the hummingbird burn when flying for 72 seconds?

A 112 calories

B 110.4 calories

C 129.6 calories

D 97.6 calories

E 115.2 calories

35 Sugar costs $1.25 per kilogram, and a chef can make 30 cupcakes per kilogram of sugar.

What is the cost of the sugar needed to make 120 cupcakes?

A $5.00

B $12.50

C $16.25

D $20.00

E $23.75