1 At 9:00 AM, the number of bacteria in a certain culture is 300 000, and the number of bacteria in the culture is expected to increase by 100 000 every 17 minutes.

At this rate, what time will the number of bacteria in the culture double from its current number?

A 10:42 AM **D** 9:51 AM

B 10:34 AM **E** 9:34 AM

C 10:00 AM

2 The regular price of apricots at the grocery store is $7 per kilogram.

During a sale, the price is reduced by 30 percent.

How much does Snow White save if she buys $2\frac{1}{2}$ kilograms of apricots during the sale?

A $17.50 **D** $4.20

B $5.25 **E** $2.10

C $4.90

3 A fruit stand sells apples for 25 cents each and plums for 40 cents each.

How many apples did she buy if Cinderella bought 100 apples and plums for $28?

**A** 80 apples **D** 30 apples

B 50 apples **E** 20 apples

C 40 apples

4 If 18 litres of petrol cost $30.60, how much do 24 litres of petrol cost at this rate?

A $40.80 **D** $73.10

B $55.80 **E** $75.90

C $61.20

5 Captain Jack Sparrow found a treasure chest containing 280 coins.

If 30 percent of the coins were gold, 25 percent were silver, and the rest were copper, how many copper coins were in the treasure chest?

A 70 copper coins

B 84 copper coins

C 96 copper coins

D 104 copper coins

E 126 copper coins
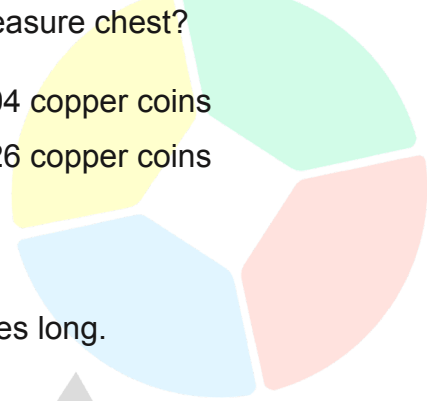
6 Bob the Builder has a piece of lumber 40 metres long.

He cuts the lumber into two pieces.

If one piece is 18 metres longer than the other piece, what is the length of the shorter piece?

A 9 metres

B 11 metres

C 18 metres

D 22 metres

E 29 metres

7 Marly bought 2 pens and 10 pencils for $48.

If each of the 2 pens costs three times as much as each of the 10 pencils, how much did each pen cost?

A $12

B $9

C $6

D $4

E $3

8 The ages of Paul, George, and Ringo sum to 96 years.

If Paul is 9 years older than George and 9 years younger than Ringo, how old is Ringo?

A 23 years old

B 32 years old

C 35 years old

D 41 years old

E 44 years old

9   A certain survey needs at least 300 responses to validate the result.

If it is expected that 60 percent of those who received the survey questionnaire by mail will respond, what is the least number of survey questionnaires that should be mailed?

A 400 survey questionnaires   **D** 500 survey questionnaires

B 420 survey questionnaires   **E** 640 survey questionnaires

C 480 survey questionnaires

10 Had Cory been 8 centimetres shorter, he would be twice as tall as her sister, Morgan.

If the combined height of Cory and Morgan is 278 centimetres, how tall is Cory?

A 131 centimetres   **D** 147 centimetres

B 135 centimetres   **E** 188 centimetres

C 139 centimetres

11 Dean had a piece of rope 50 metres long.

He cut the rope into two pieces.

If one piece is 14 metres longer than the other piece, what is the length of the longer piece?

A 36 metres   **D** 18 metres

B 32 metres   **E** 14 metres

C 24 metres

12 A jar contains black and white tokens only in a ratio of 5:3, respectively.

Which of the following could not be the total number of tokens in the jar?

A 8 tokens   **D** 160 tokens

B 50 tokens   **E** 200 tokens

C 120 tokens

13 According to a recent study, there were only 96 type O stars for every 100 million stars in the Milky Way galaxy.

If there are 3 billion stars in the Milky Way galaxy, how many of these were type O stars?

A 288

B 320

C 2 880

D 3 200

E 28 800
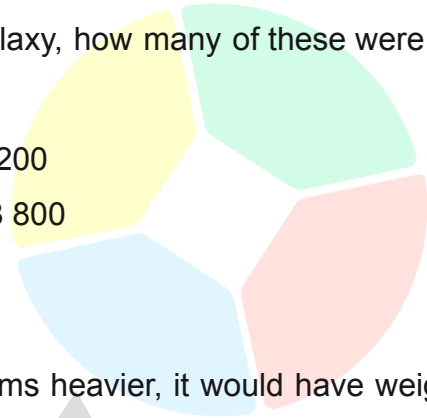
14 Had the mass of the iron ball been 10 kilograms heavier, it would have weighed 50 percent heavier than the steel ball.

If the combined mass of the iron and steel ball is 340 kilograms, what is the mass of the iron ball?

A 140 kilograms

B 160 kilograms

C 170 kilograms

D 190 kilograms

E 200 kilograms

15 The ratio of the number of brown cows to the number of black cows on Old MacDonald's farm is 6 to 7.

If there are 18 brown cows, what is the total number of brown and black cows on the farm?

A 18 cows

B 21 cows

C 27 cows

D 28 cows

E 39 cows

16 Six months ago, the water level at the reservoir was 222 metres.

If the current water level in the reservoir is 198 metres and continues to decrease at the same average monthly rate, in how many months will the water level be 180 metres?

A 3 months

B 3.5 months

C 4 months

D 4.5 months

E 5 months

17 Hank walks the first $\frac{2}{3}$ of the distance from the gym to the mall at 10 kilometres per hour and walks the remaining distance at 3 kilometres per hour.

If it took Hank 40 minutes to walk from the gym to the mall, how far did Hank walk from the gym to the mall?

A 1.2 kilometres

B 3.75 kilometres

C 5 kilometres

D 6 kilometres

E 10 kilometres

18 At the post office, a customer can buy a roll of 100 stamps for $1.50, a roll of 50 stamps for $1, or 3 cents each.
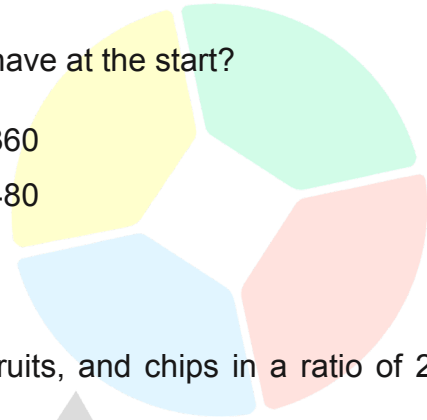
What is the greatest possible number of stamps you can buy with $7.30?

A 426 stamps

B 430 stamps

C 443 stamps

D 460 stamps

E 486 stamps

19 During the mall sale, Barbie spent $\frac{3}{5}$ of her money on a bag and spent $\frac{1}{3}$ of the remaining money on a pair of shoes.

If she had $80 left, how much money did she have at the start?

A $240

B $300

C $320

D $360

E $480

20 A trail mix snack is made up of nuts, dried fruits, and chips in a ratio of 2:3:7, respectively.

How many grams of nuts are there in a 156-gram trail mix snack?

A 13 grams

B 26 grams

C 39 grams

D 91 grams

E 130 grams

21 Harry spent $48 buying 6 magic wands and 8 cauldrons, while Ron spent $36 buying 6 magic wands and 4 cauldrons.

If Hermione bought one magic wand and one cauldron, how much did she pay?

A $6

B $7

C $8

D $9

E $10

22 Ash only had two types of pokeballs, great balls and ultra balls, in a ratio of 4 to 7.

If each ultra ball has a mass of 230 grams and the combined mass of all his ultra balls is 12 880 grams, how many great balls did Ash have?

A 18 great balls

B 28 great balls

C 32 great balls

D 56 great balls

E 60 great balls

23 Last year, a bee flew a total of 6 252 metres.

If the bee continues to travel at the same average monthly rate this year, how far will the bee fly in the next 3 months?

A 1 563 metres
B 1 683 metres
C 2 063 metres

D 2 476 metres
E 3 126 metres
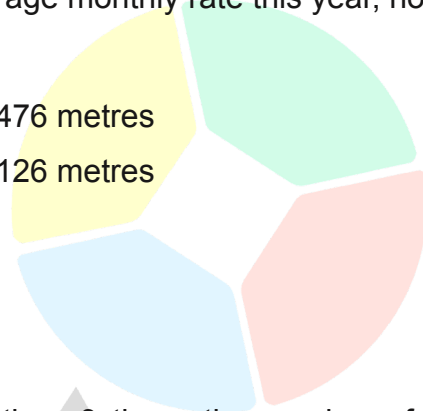
24 The Tennis Club has a total of 21 members.

If the number of female members is 3 less than 3 times the number of male members, how many male members does the Tennis Club have?

A 5 male members
B 6 male members
C 8 male members

D 9 male members
E 15 male members

25 Elsa's phone plan charges a $1.95 connection fee plus 10 cents per minute for a long-distance call.

Anna's phone plan charges a $5.95 connection fee plus 8 cents per minute for a long-distance call.

What total number of minutes of long-distance call will the total charge for the two phone plans be the same?

A 100 minutes
B 120 minutes
C 150 minutes

D 180 minutes
E 200 minutes

26 Huey, Dewey, and Louie have a total of 72 stickers.

If Huey has three times as many stickers as Louie but only three-fourths as many stickers as Dewey, how many stickers does Dewey have?

A 8 stickers   **D** 32 stickers

B 9 stickers   **E** 36 stickers

C 27 stickers
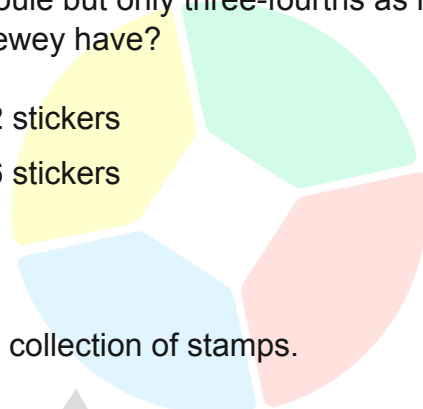
27 Blossom, Bubbles, and Buttercup each have a collection of stamps.

The combined number of stamps that Blossom and Bubbles have is 50 less than the combined number of stamps that Bubbles and Buttercup have.

If Buttercup has 10 more than twice the number of stamps that Blossom has, how many stamps does Buttercup have?

A 40 stamps   **D** 80 stamps

B 50 stamps   **E** 90 stamps

C 60 stamps

28 FastTrack Taxi charges a flag-down rate of $10 plus 25 cents per kilometre travelled, while United Taxi charges a flag-down rate of $12 plus 20 cents per kilometre travelled.

For how many total kilometres travelled will the charge of the two taxi services be the same?

A 2 kilometres   **D** 40 kilometres

B 10 kilometres   **E** 60 kilometres

C 20 kilometres

29 Flynn is currently four times as old as Rapunzel.

If three years from today, Flynn will be three times as old as Rapunzel, how old is Flynn now?

A 3 years old

B 6 years old

C 12 years old

D 24 years old

E 36 years old

30 Mickey Mouse, working alone at a constant rate, can paint a wall in 6 hours, while Donald Duck, working alone at a constant rate, can paint the same wall in 10 hours.

If the two of them work together, at their respective constant rates, painting the wall, how long will it take both of them to paint the wall?

A 3 hours 45 minutes

B 3 hours 30 minutes

C 3 hours 25 minutes

D 3 hours 20 minutes

E 3 hours 15 minutes

31 Mr. Romero left one-fourth of his estate to his wife, and each of his three children got one-fourth of the remaining.

If his wife and one of his children got $350 000 from the estate, what was the total amount of Mr. Romero's estate?

A $800 000

B $960 000

C $1 080 000

D $1 350 000

E $1 800 000

**32** The machine at the factory can make 8 widgets every 8 seconds.

At this rate, how many widgets can the machine make in 8 minutes?

A 8 widgets

B 16 widgets

C 60 widgets

D 240 widgets

E 480 widgets

33 The total number of students in Steve Xu's selective class can be evenly divided into 6 equal groups or 27 equal groups.

What is the smallest possible total number of students in Steve Xu's selective class?

A 27 students

B 33 students

C 54 students

D 81 students

E 162 students
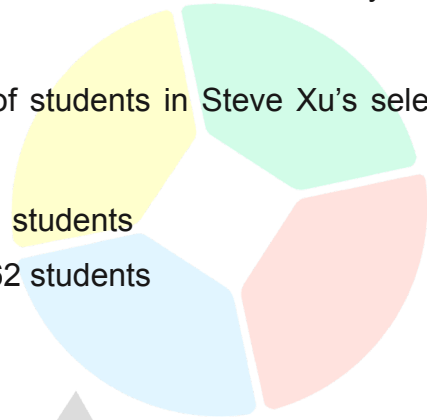
34 If it takes 8 seconds for 8 identical machines, each working at the same constant rate, to produce 8 widgets, how many seconds will it take 40 such machines to make 40 widgets?

A 4 seconds

B 8 seconds

C 16 seconds

D 20 seconds

E 40 seconds

35 Eight workers can make 360 birdhouses per hour.

If each worker works at the same constant rate, how many birdhouses can 5 such workers make in 3 hours?

A 675 birdhouses

B 750 birdhouses

C 1 800 birdhouses

D 5 900 birdhouses

E 7 500 birdhouses