	1	Ten years ago, Homer's age was thre	ee times Bart's age.
		Ten years from today, Homer's age w	vill be twice Bart's age.
		What is the ratio of the current age o	f Homer to the <mark>current</mark> age of Bart?
		<b>A</b> 11 to 7	<b>D</b> 7 to 3
		<b>B</b> 9 to 5	<b>E</b> 5 to 2
		<b>C</b> 7 to 4	
2 A vendor has three barrels of oil, each containing 435 litres, 493 litres litres.			ach containing 435 litres, 49 <mark>3 litres</mark> , and 551
			ne oil in the barrels into containers of equal number of containers the vendor needs?
		A 61 containers	<b>D</b> 47 containers
		<b>B</b> 51 containers	E 45 containers
		C 49 containers	
	3	Mickey Mouse has three ropes of ler	ngths 42 metres, 49 metres, and 63 metres.
He wants to cut the ropes into pieces of equal length.  What is the greatest possible length of each piece?		s of equal length.	
		of each piece?	
		A 7 metres	<b>D</b> 42 metres
		B 14 metres	E 63 metres
		C 21 metres	

4	A box contained an unknown number of black and white marbles in a ratio of 3 to 4.			
	Jimmy added 300 black marbles into the box, and the corresponding ratio of black to white marbles became 9 to 8.			
	How many marbles are in the box now?			
	A 1 700 marbles	D 4 200 marbles		
	B 2 400 marbles	E 4 500 marbles		
	C 3 800 marbles			
5	The price of a marker is 1/3 more than the price of a pen.			
	If the difference in the prices of the marker and the pen was 35 cents, what is the price of the marker?			
	<b>A</b> \$0.70	<b>D</b> \$1.75		
	<b>B</b> \$1.05	E \$2.45		
	<b>C</b> \$1.40			
6	The cost of 4 gums and 3 mini-mints is over \$12 but less than \$13.			
	The cost of 2 gums and 5 mini-mints is over \$8 but less than \$9.			
	If the price of one gum is ${\bf c}$ cents more than the price of one mini-mint, which of the following could be the value of ${\bf c}$ ?			
	<b>A</b> 60	<b>D</b> 220		
	<b>B</b> 105	<b>E</b> 270		
	<b>C</b> 130			

**7** Jack leaves the museum and walks towards the library at a constant speed of 2 kilometres per hour.

Half an hour later, Jill also leaves the museum and walks towards the library, along the same route, at a constant speed.

How fast was Jill walking if Jill overtook Jack after 1 hour 48 minutes?

A 2 5/9 kilometres per hour D 5 1/3 kilometres per hour

B 4 kilometres per hour E 7 kilometres per hour

C 4 7/10 kilometres per hour

**8** A certain type of bacteria doubles in number every second.

If a single bacterium is put in a dish, it will fill the dish in exactly one hour.

How much time did it take the bacterium to half-fill the dish?

A 30 minutes D 52 minutes

**B** 35 minutes 45 seconds **E** 59 minutes 59 seconds

C 45 minutes 24 seconds

**9** A box of tokens can be equally divided into equal groups of 21.

If the tokens in the box are equally divided into equal groups of 16, 20, 25, and 45, there will be 3 left-over tokens in each case.

What is the least possible number of tokens in the box?

**A** 2 403 tokens **D** 6 203 tokens

**B** 3 603 tokens **E** 7 203 tokens

**C** 4 803 tokens

**10** The combined mass of the two boxes is 110 kilograms. If the mass of the first box is 20 kilograms more than half the mass of the second box, what is the mass of the second box? A 20 kilograms **D** 60 kilograms **B** 40 kilograms E 90 kilograms C 50 kilograms 11 A certain long-distance plan charges \$4 for the first two minutes and \$1.50 for each additional minute after that. What is the greatest number of minutes of a long-distance call Cindy can make with \$40? D 26 minutes A 23 minutes E 27 minutes **B** 24 minutes C 25 minutes **12** Six hundred students took the Science and Math aptitude tests. Thirty-five percent of the students failed the Science aptitude test, and 45 percent failed the Math aptitude test. If 40 percent of students who passed the Math aptitude test also passed the Science aptitude test, how many students failed both aptitude tests? A 162 students **D** 38 students B 138 students E 12 students C 60 students

13	Ze	Zeus is currently three times as old as Hercules.			
		Zeus was 42 years old when Hercule us was seven times as old as Hercule		vas born, how old was Hercules when	
	A	7 years old	D	14 years old	
	В	10 years old	Ε	16 years old	
	С	12 years old			
14		ere are 4 times as many blue marbl any green marbles as red marbles.	es	as green marbles in a box and 1/3 as	
	lf t	here are 48 red marbles in the box, he	ow	many blue marbles are there?	
	A	144 blue marbles	D	16 blue marbles	
	В	64 blue marbles	E	9 blue marbles	
	С	36 blue marbles			
15	Fiv	ve barrels of oil contain an average (a	rith	metic mean) of 75 litres per barrel.	
		the first four barrels contain an avera	ge	of 72 litres per barrel, how much oil is	
	Α	75 litres	D	84 litres	
	В	78 litres	Ε	87 litres	
	С	81 litres			

16 Dora has an album containing Australian and Singaporean stamps only, and there are three times as many Australian stamps as Singaporean stamps. If Dora removes 12 Singaporean stamps and adds 3 Australian stamps to the album, then there will be six times as many Australian stamps as Singaporean stamps in the album. How many Singaporean stamps are currently in the album? A 15 Singaporean stamps **D** 50 Singaporean stamps **B** 20 Singaporean stamps E 75 Singaporean stamps C 25 Singaporean stamps 17 Old MacDonald's farm has exactly twice as many goats as pigs. Which of the following cannot be the total number of goats and pigs on Old MacDonald's farm? **A** 81 **D** 60 **B** 72 E 50 **C** 69 18 One-fifth of all the books on the shelf are hard-bound books, and two-thirds of all the hard-bound books are History books. What fraction of the books on the shelf are not hard-bound History books? **A** 1/15 **D** 11/15 **B** 2/15 **E** 13/15

**C** 7/15

19 Ten percent of all the cars in the parking lot are blue and have tinted windows, and 75 percent of the cars without tinted windows are blue. If 40 percent of all the cars in the parking lot are blue, what percent of the cars have tinted windows? A 25 percent **D** 75 percent **B** 40 percent E 85 percent C 60 percent 20 The number of blue marbles in the jar is 2/3 the number of red marbles, and the number of yellow marbles is 1/4 greater than the number of blue marbles. If there are 14 more red marbles than yellow marbles in the jar, how many blue marbles are there? **A** 12 blue marbles **D** 56 blue marbles E 70 blue marbles **B** 28 blue marbles C 42 blue marbles **21** Devin was planning his road trip. He figured out that if he drove 1/3 of the total distance on the first day and 60 kilometres on the second day, he still had half of the total distance to drive. What was the total distance of his road trip? A 360 kilometres **D** 90 kilometres **B** 180 kilometres E 60 kilometres C 120 kilometres

22 During the mall sale, Minnie Mouse bought a \$10 shirt at a 10 percent discount, a \$20 bag at a 20 percent discount, and a \$40 pair of shoes at a 40 percent discount. If Daisy Duck bought the same shirt, bag, and pair of shoes all at a uniform discount, and she ended up paying the same amount as Minnie Mouse, what percent discount did Daisy Duck get? A 10 percent **D** 40 percent **B** 20 percent E 50 percent C 30 percent 23 Bert has 28 more baseball cards than Ernie. If Bert were to give Ernie 1/4 of his baseball cards, then Ernie would have half as many baseball cards as Bert would then have. How many baseball cards does Bert originally have? A 22 baseball cards **D** 36 baseball cards **B** 30 baseball cards E 44 baseball cards C 32 baseball cards 24 The red light flashes once every 18 minutes, the yellow light flashes once every 24 minutes, and the orange light flashes once every 32 minutes. If all three lights flash together at the same time, after how much time will all three lights flash together at the same time again? A 1 hour 36 minutes **D** 4 hours 48 minutes B 2 hours E 5 hours C 2 hours 24 minutes

Ten percent of all the birds perched on the tree were parrots, and 80 percent of the parrots were green.				
If there were 20 green parrots perched on the tree, what was the total number of birds perched on the tree?				
Δ	200 hirds	D	250 birds	
			260 birds	
		_	200 51143	
O	230 bilds			
	•	0 p	ercent, while Jill incre <mark>ased h</mark> er driving	
	·		·	
Α	33 1/3 percent	D	48 percent	
В	36 2/3 percent	E	50 percent	
С	40 percent			
Or	ne-fifth of the students in Steve Xu's s	eled	ctive class are from Sydney.	
stu	idents from Sydney, what fraction of	the	_	
Α	1/5	D	8/15	
В	2/5	Ε	2/3	
С	7/15			
	If the bir A B C Or If stuare A B	the parrots were green.  If there were 20 green parrots perched birds perched on the tree?  A 200 birds  B 220 birds  C 230 birds  Jack decreased his driving speed by 2 speed by 20 percent.  If both now drive at the same speed original driving speed than Jill's original  A 33 1/3 percent  B 36 2/3 percent  C 40 percent  One-fifth of the students in Steve Xu's sold the number of students from News students from Sydney, what fraction of	the parrots were green.  If there were 20 green parrots perched on birds perched on the tree?  A 200 birds  B 220 birds  C 230 birds  Jack decreased his driving speed by 20 perspeed by 20 percent.  If both now drive at the same speed, he original driving speed than Jill's original driving and the percent  A 33 1/3 percent  B 36 2/3 percent  C 40 percent  One-fifth of the students in Steve Xu's selected the number of students from Newcastl students from Sydney, what fraction of the are neither from Sydney nor Newcastle?  A 1/5  B 2/5  E	

**28** A box contains gold and silver balls only. The average (arithmetic mean) mass of all the gold balls is 56 grams higher than the average mass of all the silver balls. If 160 gold balls and 120 silver balls are in the box, then the average mass of all the balls is how many grams higher than the average mass of all the silver balls? D 36 grams A 24 grams **B** 28 grams E 40 grams C 32 grams 29 One-twentieth of the marbles in the jar are red, and there are 30 red marbles in the jar. How many marbles are not red? A 30 marbles **D** 570 marbles B 300 marbles E 600 marbles C 540 marbles

**30** Half of the students in Denise's class are boys, and 30 percent of the boys scored at least 90 percent on the test.

If 40 percent of the students in Denise's class scored at least 90 percent on the test, what percentage of the girls scored less than 90 percent on the test?

A 30 percent

B 40 percent

E 70 percent

C 50 percent

**31** Two tanks are filled to capacity with water.

The capacity of the first tank is 600 litres more than the capacity of the second tank.

If 100 litres of water are removed from each tank, the first tank will contain three times as much water as the second tank.

What is the combined capacity of the two tanks?

**A** 1 400 litres

**D** 900 litres

**B** 1 200 litres

E 800 litres

**C** 1 000 litres

32 As a car sales agent, Patrick can choose one of two modes of monthly salary.

The first mode is he receives a base monthly salary of \$25 000 plus a 15 percent commission on total monthly sales only if his total monthly sales exceed \$100 000.

The second mode is he receives a base monthly salary of \$10 000 plus a 25 percent commission on his total monthly sales.

At what total monthly sales would Patrick receive the same monthly salary in either mode?

**A** \$175 000

**D** \$120 000

**B** \$160 000

**E** \$60 000

C \$125 000

33	Big	g Bird made a large pizza that he cut i	nto	8 slices.
	He cut half of the slices into thirds and cut 75 percent of the remaining slices into halves.			
	Но	w many slices of pizza did Big Bird ha	ave	now?
	A	16 slices	D	22 slices
	В	18 slices	Ε	23 slices
	С	19 slices		
34	De	exter has one hour to complete a 60-q	ues	tion IQ test.
		Dexter completes the first 30 question have on average to complete each or		20 minutes, how many seconds does e remaining questions?
	Α	60 seconds	D	90 seconds
	В	70 seconds	Ε	100 seconds
	С	80 seconds		
35	Αk	bookshelf at the library contains 40 bo	oks	S.
	If 30 of the books on the bookshelf are hard-bound books and 20 are History books, what is the greatest possible number of hard-bound History books on the bookshelf?			
	Α	10	D	25
	В	15	Ε	30
	С	20		