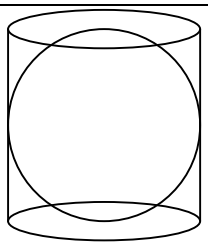
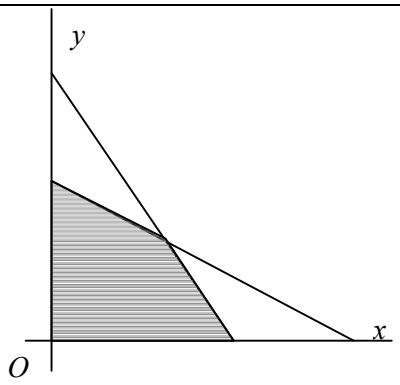
21.	It is known that $a + b = 2$ and $a^2 + b^2 = 2$. What is the value of $a^4 + b^4$?								
	a.	32	b.	16	c.	8	d.	4	e.	2

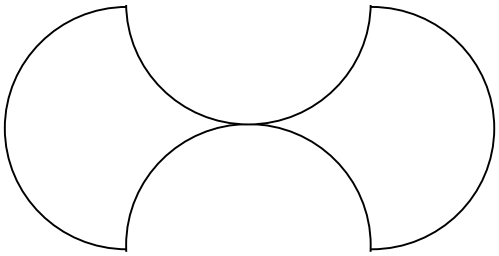
22.	Time is inversely proportional to speed. On Monday I travel to work at an average speed s km/h and it takes t minutes. On Tuesday I increase my average speed by 25%. What will happen to the time taken to travel to work?								
	a.	stays the same	b.	decreases by 25%	c.	decreases by 20%	d.	decreases by 15%	e.	decreases by 10%

23.	The sphere fits perfectly inside the cylinder. Find the ratio of the volume of sphere to that of the cylinder. 								
	a.	1:π	b.	2:π	c.	π:4	d.	4:3	e.	2:3

24.	Two math books, 2 Science books and 1 dictionary are to be put on a shelf. If the books are placed so that no two books of the same type are together, how many different ways can we arrange the books?								
	a.	10	b.	8	c.	6	d.	5	e.	4

25.	The shaded region in the diagram is bounded by the lines $3x + 2y = 30$, $2x + 3y = 30$, and the x- and the y-axes. Its area is 								
	a.	30	b.	60	c.	84	d.	90	e.	150

26. Four semicircles are constructed as shown in the diagram. Two are tangent in the middle. Find the area of the region inside the diagram, if the diameter of each of the semicircles is 1 cm long.



	a.	1	b.	$\pi\sqrt{2}$	c.	$\frac{\pi}{4}$	d.	π	e.	$\frac{\pi}{2}$

27. The altitude to the hypotenuse of a right triangle divides the hypotenuse into two segments of length 3 and 4. How long is the altitude?

	a.	$2\sqrt{3}$	b.	$\sqrt{7}$	c.	5	d.	3.4	e.	$3\sqrt{2}$

28. Solve for the real number x, if $x = \sqrt{1+\sqrt{1+\sqrt{1+\ldots}}}$.

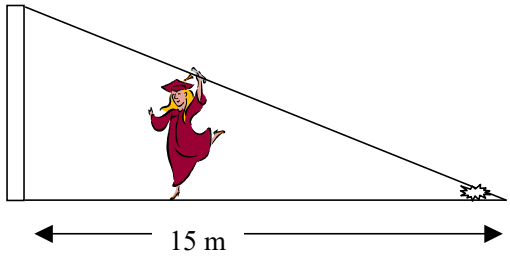
	a.	$\frac{\sqrt{3}-1}{2}$	b.	$\frac{1-\sqrt{3}}{2}$	c.	$\frac{1+\sqrt{3}}{2}$	d.	$\frac{1+\sqrt{5}}{2}$	e.	$\frac{1-\sqrt{5}}{2}$

29. What is the units digit of 7^{2001}?

	a.	9	b.	3	c.	5	d.	6	e.	7

30. a, b, and c are three numbers chosen randomly with replacement from the set {1, 2, 3, 4, 5}. What is the probability that $ab + c$ is an even number?

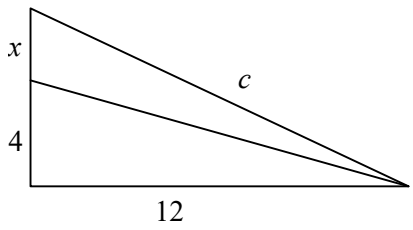
	a.	$\frac{2}{5}$	b.	$\frac{59}{125}$	c.	$\frac{1}{2}$	d.	$\frac{64}{125}$	e.	$\frac{3}{5}$

31.	When a girl, 1.74 m tall stands between a light and a wall that are 15 m apart, she leaves a shadow on the wall. Find the height of the shadow when she is 6 m away from the wall. 								
	a.	1.16	b.	1.95	c.	2.90	d.	3.40	e.	3.70

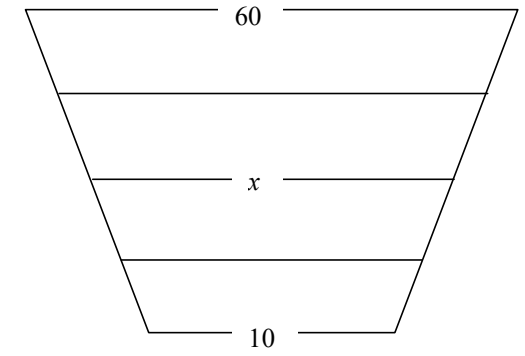
32.	Find the number of digits in $4^{12} \cdot 5^{20}$.								
	a.	12	b.	18	c.	20	d.	22	e.	25

33.	$\dfrac{2^{n+4}-2\left(2^{n}\right)}{2\left(2^{n+3}\right)}=$								
	a.	$2^{n+1}-\dfrac{1}{8}$	b.	-2^{n+1}	c.	$1-2^{\frac{n+1}{n+4}}$	d.	$\dfrac{7}{4}$	e.	$\dfrac{7}{8}$

34.	Peter invests a part of his \$4500 at an annual simple interest of 4% and the rest at 6%. At the end of the year he receives the same amount of interest from both. What is his average annual interest?								
	a.	5.2%	b.	5%	c.	4.8%	d.	4.6%	e.	4.5%

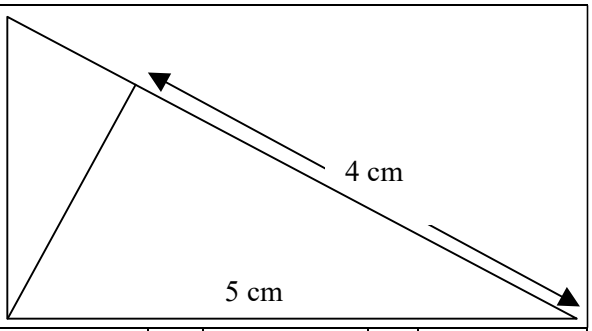
35.	If $x + c = 4 + 12$, then $x =$ 								
	a.	8	b.	6	c.	$16-2\sqrt{6}$	d.	$\dfrac{12}{5}$	e.	$4\sqrt{10}-4$

36.	If the numbers $\sqrt[3]{9}, \sqrt{5}$, 1, 2, 3 are arranged in ascending order, then the median (middle number) is									
	a.	1	b.	2	c.	3	d.	$\sqrt{5}$	e.	$\sqrt[3]{9}$

37.	The diagram shows a Trapezium with parallel lines equally spaced inside it. Find the value of x. 									
	a.	25	b.	30	c.	33	d.	35	e.	$\sqrt{60}$

38.	If $9^{x+2} = 240 + 9^x$, then the value of x is									
	a.	$\frac{1}{10}$	b.	$\frac{1}{5}$	c.	$\frac{3}{10}$	d.	$\frac{2}{5}$	e.	$\frac{1}{2}$

39.	For the infinite series $1-\frac{1}{2}-\frac{1}{4}+\frac{1}{8}-\frac{1}{16}-\frac{1}{32}+\frac{1}{64}\cdots$, let S be the limiting sum. Then S equals									
	a.	$\frac{2}{7}$	b.	$\frac{6}{7}$	c.	$\frac{9}{32}$	d.	$\frac{27}{32}$	e.	1

40.	The height to the hypotenuse of the right triangle cuts a 4 cm segment on that hypotenuse. One side of this right triangle measures 5 cm. Find the ratio of the two small triangles. 									
	a.	8:17	b.	16:25	c.	4:3	d.	16:9	e.	80:27