LA KANGOEROE Lereld Lijde Liskunde Ledstrijd

Good luck and most of all have fun.





calculator not allowed



scrap paper is allowed

23th March the

the website

answers will be on







20th April the

results and awards

at school mid-May

you may use

75 minutes

20th April the explanations will be on the website



www.zwijsen.nl











www.rekenzeker.nl

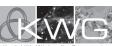




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Www.denksport.nl





wizPROF havo 4 & 5 vwo 3, 4, 5 & 6

WIZPROF 2010

1.	20102010 : 2010	= ?							
	A. 11	B. 101	C. 1001		D. 1000 [°]	1	E. 1010	1	
2.	She scored exac	game, Tony scored 8 tly one point more. s can be scored in th	-	ts. Lisa pe	erformed a l	ittle bette	r and obtain	ied 90%.	
	A. 5	B. 17	C. 18		D. 20		E. 25		
3.	The top and the	bottom row give the	same number v	when add	ed up.				
	1 2	3 4	4 5	6	7	8	9	10	2010
	11 12	. 13 1	4 15	16	17	18	19	20	*
	What is the num	per at the *?		-	-		-		
	A. 1010	B. 1020	C. 1910		D. 1990		E. 2020	_	
4.		o consists of four equination of the outside of thi		area of on	ne cube is 2	4 cm².			
	A. 24 cm ²	L. 24 cm ² B. 32 cm ² C. 40 cm ² D. 64 cm ²		1 ²	E. 80 cm ²				
5.	When she turned So, every year th	d one year old, her l I two, there were tw here are as many ca ese candles, and no	o candles on the ndles as her ag	e cake, et e.					
	A. 11 years old	B. 12 years old	d C. 13 yea	ars old	D. 14 ye	ars old	E. 15 ye	ears old	
6.	When holding the	blded in two three tir e strip upright, you c owing strips cannot l	an see the fold						
7.	He draws a figur	n, Tony erases one o e, using the remaini npossible for him to	ng points for ve	rtices.			- + + +	•	
	 A. equilateral tria C. right-angled to 		B. rectan D. rhomb		E. penta	gon			
8.	The picture shows that 1 + 3 + 5 + 7 = 4 x 4. To what will 1 + 3 + 5 + 7 + 9 + 11 + 13 + 15 + 17 + 19 + 21 be equal?								
	A. 10 x 10	B. 11 x 11	C. 12 x 1	2	D. 13 x 1	13	E. 14 x	• 14	
9.	During one month, there are three Tuesdays on an even date. What day will be the 21st of that month?								
	A. Wednesday	B. Thursday	C. Friday	1	D. Satur	day	E. Sund	ay	
I O .	Five athletes have been running. On the set of axes shown alongside you can read off the time and distance for each athlete. Who ran fastest?					distand	Alicia	Carlos Ernesto	
	A. Alicia B. Bea C. Carlos						B	ea	Dani
	D. Dani E. Ernesto								time

11.	Lisa is on holiday in Verona. Five famous bridges cross a river there. Lisa takes a walking tour through town. She starts and finishes at her hotel on the north bank of the river. Lisa walks across each of the famous bridges, and so crosses the river several times. How often at least?							
	A. 3	B. 4	C. 5	D. 6	E. 7			
12.	You add up th	ute from A to B followin e numbers you come a ferent answers could y	across.		1-2-1-8 2-3-2 A-1-2-1			
	A. 1	B. 2	C. 3	D. 4	E. 6			
13.	<i>DC</i> is perpendicular to <i>EB</i> , the exterior angle at <i>A</i> is 329°, $\angle B = 18^\circ$. How big is $\angle C$, the angle marked with a question mark?							
	A. 39° E. 43°	B. 40°	C. 41°	D. 42° B	18° E			
14.	Today (March 18, 2010) is both Lisa's birthday and the birthday of her grandmother. When multiplying the age of her mother and that of her grandmother, you get 2010. In what year was Lisa's grandmother born?							
	A. 1933	B. 1934	C. 1943	D. 1944	E. 1953			
15.		uare with sides 1. Eare equilateral triangl ngth of <i>FD</i> ?	es.					
	$\mathbf{A} \cdot \frac{\sqrt{3}}{2}$	B. √5 – 1	C. √2	D. √6 – 1	E. $\sqrt{3}$ A B			
16.	 We look at whole numbers having the following two properties: adding up the digits of the number, you will get 2010; multiplying the digits of the number you will get 2. How many of such numbers do exist? 							
	A. 1004	B. 1005	C. 2008	D. 2009	E. 2010			
17.	A circle of radius 4 is divided in four equal regions using pieces of circles of radius 2. What is the perimeter of such a region?							
	Α. 2π	Β. 4π	C. 6π	D. 8π	Ε. 12π			
18.	Two rows of shopping trolleys are parked at a supermarket. The first row of 10 trolleys is 2.9 meters long. The second row of 20 trolleys is 4.9 meters long. How long is a shopping trolley?							
	A. 0,9 m	B. 1 m	C. 1,1 m	D. 1,2 m	E. 1,4 m			
19.	The area of th The grey regio	triangle has been folde le left-hand triangle is ons have a total area o rea of the left-hand tria	1.5 times the area of f 1.		in the right-hand figure.			
	A. 2	B. 3	C. 4	D. 5	E. impossible to know			
20.		ilateral triangle consist ² is the area of the gre		eral triangles of area 1	cm ² each.			
	A. 9	B. 10	C. 11	D. 12	E. 15			

WIZPROF 2010

These line segments divide two sides of the triangle in 1 ^o equal parts. Which percentage of the area of the triangle is grey? A. 42,5% B. 45% C. 46% D. 47,5% E. 50% 23. How many of the numbers 1 ¹ , 2 ² , 3 ¹ , up to and including 100 ¹⁰⁰ are squares? A. 5 B. 15 C. 50 D. 54 E. 55 24. In some lake live 6-, 7-, and 8-armed octopuses. The 7-armed ones always lie, the 6- and 8-armed ones always speak the truth. Four octopuses are lying on the beach together: a blue one, a green one, a yellow one, and a recore. The blue octopus asys: Together we have 22 arms [*] , the yellow one says: Together we have 22 arms [*] , the yellow one says: Together we have 22 arms [*] , the we have 23 arms [*] , the yellow one says: Together we have 22 arms [*] , they we have 23 arms [*] , they we have 25 arms [*] . How many arms does the red octopus have? A. 6 B. 6 of 8 C. 7 D. 8 E. impossible to know 25. A kangaroo jumps alternately on the two lines, starting from 0. From 0 to A, then to B, next to C, ectetera. All jumps are equally long. The two lines form an angle of 7 degrees. He effects and arraway from 0 as possible, and then stops jumping. A. J B. K C. L D. M E. N B. 26. Tony produces a sequence of numbers. He starts with 1, 2 and 3. After that he computes every number from the previous three. He subtracts the last number from the sum of the preceding two. This way he obtains the equence 1, 2, 3, 0, 5, -2, 7, -4, etcetera. What is the 2010th number in this sequence? A2006 B2004 C2002 D. 2008 E2008 27. The hot water tap produces water of 64 °C, the cold water tap water of 20 °C. Both taps produce the same arount of water when fully opened. The hot water tap is opened $\frac{2}{3}$. The cold water tap is opened $\frac{4}{3}$. What will the temperature be, in °C, of water that runs into the bath? A. 35 B. 40 C. 45 D. 48 E. 58 28. In a trapezium with AB = CD = 2, X is the midpoint of side AB, and angle CXD = 90°. What is the perimeter of the trapezium? A. 5 B. 6 C, 7 D. 8 E. can not be determined 29. A bar code, as sh	21.	In this exercise we look at positive three-digit whole numbers of which the middle digit is the average of the other two digits. One example of such number is 741. How many of these numbers do exist?							
These line segments divide two sides of the triangle in 10 equal parts. Which percentage of the area of the triangle is grey? A. 42,5% B. 45% C. 46% D. 47,5% E. 50% 3. How many of the numbers 1', 2', 3', up to and including 100 ^{11%} are squares? A. 5 B. 15 C. 50 D. 54 E. 55 3. In some lake live 6, 7', and 8-armed octopuese. The 7-armed ones always lie, the 6' and 8-armed ones always speak the turh. Four octopues are king on the beach together: a blue one, a green one, and		A. 9	B. 12	C. 25	D. 37	E. 45	Δ		
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 A. 35 B. 40 C. 45 J. 48 E. 58 28. In a trapezium with AB = CD = 2, X is the midpoint of side AB, and angle CXD = 90°. What is the perimeter of the trapezium? A. 5 B. 6 C. 7 D. 8 E. can not be determined 29. A bar code, as shown, consists of a number of bars, alternately white and black. The outer bars are always black. Every bar (white and black) is always 1 or 2 wide, the total width is 12. How many different possibilities are there for these bar codes? A. 12 B. 24 C. 66 D. 116 E. 132 30. An oval is made of four circle arcs. The arcs on the left and the right are equal, and so are the arcs on top and bottom. The oval has a horizontal and a vertical axis of symmetry, and is smooth everywhere. The oval fits exactly inside a 4 by 8 rectangle. The radius of the small circle arcs is 1. What is the radius of the large circle arcs?	27.	Both taps produce the same amount of water when fully opened. The hot water tap is opened $\frac{2}{3}$, the cold water tap is opened $\frac{4}{5}$.							
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