FINAL EXAM ON DS

Test No. **3** —o— Total questions: **19** —o— Test Time: **45**min

--- edited as a demo ---

1 What is the least common multiple of 15, 9 and 6?

A 60 **B** 90 **C** 45 **D** 30

2 Solve. $-7 \cdot x + 1 - 10 \cdot x^2 = 0$

A $x = \frac{10 \pm \sqrt{89}}{20}$ **B** $x = \frac{-10 \pm \sqrt{89}}{20}$ **C** $x = \frac{7 + \sqrt{89}}{-10}$ **D** $x = \frac{7 \pm \sqrt{89}}{-20}$

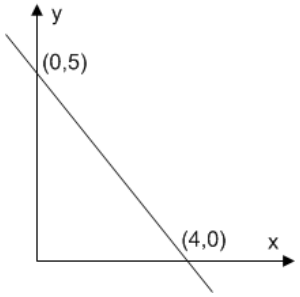
3 John starts a saving account with $100. Every week he adds $6 to his account. Which equation can be used to determine the number of weeks w, after which John's accounts reaches $220?

A 6w + 100 = 220 **B** 6w - 100 = 220 **C** 6w + 220 = 100 **D** 6 + w = 2204

4 102 - (33 - 42)∗2 =

A 16 **B** 75 **C** -21 **D** -28

5 Which equation best represents the line graphs below ?



A y = -(4/5)x + 5 **B** y = (4/5)x + 5 **C** y = -(5/4)x + 5 **D** y = (5/4)x + 5

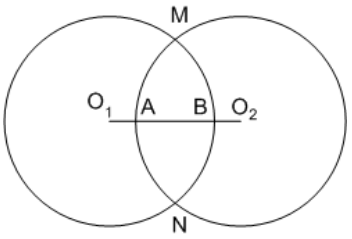
6 Solve. $10x^2 = 6 + 9x$

A $x = \frac{9 \pm \sqrt{321}}{20}$ **B** $x = \frac{-1 \pm \sqrt{108}}{19}$ **C** $x = \frac{5 \pm \sqrt{65}}{-2}$ **D** $x = \frac{4 \pm \sqrt{26}}{10}$

7 Solve. $-6x - 1 + 5x^2 = \underline{8x^2}$

A $x = \frac{3 \pm \sqrt{6}}{-3}$ **B** $x = \frac{6 \pm \sqrt{21}}{3}$ **C** $x = \frac{7 \pm \sqrt{71}}{20}$ **D** $x = \frac{9 \pm \sqrt{21}}{4}$

8 The two circles in the figure below intersect each other in M and N. Both circles have radii of 4 inches. AB = 3 inches where A and B are the points of intersection of segment O_1 and O_2 with the two circles.



What is the length O_1O_2?

(A) 4 inches (B) 3 inches (C) 5 inches (D) 2 inches

9 If a, b and c are odd integers, which of the following expressions must be an even integer?

(A) a(b + c - 1) (B) a(b + c) (C) a + b + c (D) ab + bc + ca

10 Mike bought 5 shirts and 4 ties. The cost of a tie is $9 and the cost of a shirt is $15. Which equation can be used to find the total cost of the 5 shirts and 4 ties, p?Cau 3...

(A) p = 5×9 + 4×15 (B) p = 5×15 + 4×9 (C) p = 5×4 + 9×15 (D) p = 5×5 + 4×4

		Predicted	
		Negative	Positive
Observed	Negative	**TN**	**FP**
	Positive	**FN**	**TP**

Denote by,

$$\text{Sensitivity} = \frac{TP}{TP + FN}, \text{ the true positive rate;}$$

$$\text{Specificity} = \frac{TN}{TN + FP}, \text{ the negative predictive value;}$$

and the cost function:

$$\text{Net-revenue} = \begin{matrix} \#\text{TN} \times \text{avg.annual.interest.income} \\ -\#FP \times Fp.cost - \#FN \times Fn.cost \\ -\#of\text{TP} \times Tp.Cost.per.customer \end{matrix}$$

11 Which of the followings is best for tuning a machine learning model?

(A) Sensitivity (B) Type-I error (C) Specificity (D) Net-revenue

12 Which of the followings may be used to measure how often the classifier correctly generates a positive prediction?

(A) TP (B) FP (C) Sensitivity (D) Specificity

13 Which of the followings is of type-II error?

(A) FN (B) FP (C) TP (D) TN

14 Which of the followings may be used to measure how often the classifier correctly generates a negative prediction?

(A) Sensitivity (B) FP (C) Specificity (D) TP

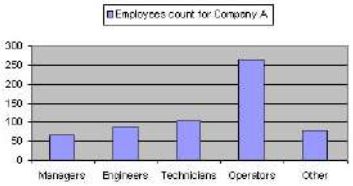
15 Which of the followings is of type-I error?

(A) FP (B) FN (C) TP (D) TN

16 Where is located Microsoft headquarters?

(A) New York (B) California (C) Texas (D) Washington

17 What is the approximate percentage of all employees of Company A that are operators?



(A) 12% (B) 29% (C) 44% (D) 33%

18 Which of the following file formats .GIF file extension is used for?

(A) Graphics (B) Video (C) Audio (D) Text

——————— **End of Test** ———————

	0	0	3	2	7	1	2	6	6	9	4	7	
0	●	●	○	○	○	○	○	○	○	○	○	○	
1	○	○	○	○	○	●	○	○	○	○	○	○	
2	○	○	○	●	○	○	●	○	○	○	○	○	
3	○	○	●	○	○	○	○	○	○	○	○	○	
4	○	○	○	○	○	○	○	○	○	○	●	○	
5	○	○	○	○	○	○	○	○	○	○	○	○	
6	○	○	○	○	○	○	○	●	●	○	○	○	
7	○	○	○	○	●	○	○	○	○	○	○	●	
8	○	○	○	○	○	○	○	○	○	○	○	○	
9	○	○	○	○	○	○	○	○	○	●	○	○	

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Name/Signature: ☞ **FOR GRADER ONLY**

DOB: Class:

Exam proctor 1:

Exam proctor 2:

	A	B	C	D	
1	○	●	○	○	
2	●	○	○	○	
3	●	○	○	○	
4	○	●	○	○	
5	○	●	○	○	
6	●	○	○	○	
7	●	○	○	○	
8	○	○	○	●	
9	○	●	○	○	
10	●	○	○	○	
11	●	○	○	○	
12	●	○	○	○	
13	●	○	○	○	
14	○	○	○	●	
15	●	○	○	○	
16	○	○	○	●	
17	○	○	○	●	
18	●	○	○	○	

	0	0	3									
0	●	●	○	0	1	2	3	4	5	6	7	8
1	○	○	○	0	1	2	3	4	5	6	7	8
2	○	○	○	0	1	2	3	4	5	6	7	8
3	○	○	●	0	1	2	3	4	5	6	7	8
4	○	○	○	0	1	2	3	4	5	6	7	8
5	○	○	○	0	1	2	3	4	5	6	7	8
6	○	○	○	0	1	2	3	4	5	6	7	8
7	○	○	○	0	1	2	3	4	5	6	7	8
8	○	○	○	0	1	2	3	4	5	6	7	8
9	○	○	○	0	1	2	3	4	5	6	7	8

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Exam proctor 1:

Exam proctor 2:

	A	B	C	D
1	Ⓐ	Ⓑ	Ⓒ	Ⓓ
2	Ⓐ	Ⓑ	Ⓒ	Ⓓ
3	Ⓐ	Ⓑ	Ⓒ	Ⓓ
4	Ⓐ	Ⓑ	Ⓒ	Ⓓ
5	Ⓐ	Ⓑ	Ⓒ	Ⓓ
6	Ⓐ	Ⓑ	Ⓒ	Ⓓ
7	Ⓐ	Ⓑ	Ⓒ	Ⓓ
8	Ⓐ	Ⓑ	Ⓒ	Ⓓ
9	Ⓐ	Ⓑ	Ⓒ	Ⓓ
10	Ⓐ	Ⓑ	Ⓒ	Ⓓ
11	Ⓐ	Ⓑ	Ⓒ	Ⓓ
12	Ⓐ	Ⓑ	Ⓒ	Ⓓ
13	Ⓐ	Ⓑ	Ⓒ	Ⓓ
14	Ⓐ	Ⓑ	Ⓒ	Ⓓ
15	Ⓐ	Ⓑ	Ⓒ	Ⓓ
16	Ⓐ	Ⓑ	Ⓒ	Ⓓ
17	Ⓐ	Ⓑ	Ⓒ	Ⓓ
18	Ⓐ	Ⓑ	Ⓒ	Ⓓ