Pre Calculus - Spring Semester

Final Exam - Review 4

Name _____

Per/Sec. _____ Date _____

Solve.

1. $y = x^2 + 1$
   $x + y = 3$

2. $y^2 = 1 - x$
   $x + 2y = 1$

3. $y - 2x - 3 = 0$
   $x^2 - y = 0$

4. At a student bake sale cakes sold for \$4 each and pies sold for \$5 each. The students sold a total of 75 cakes and pies and made \$340. Write a system of equations that describes the number of each ticket sold.

5. The entrance fee to a club was \$10 for non-members and \$2 for members. If 500 tickets were sold and the total amount of money taken in was \$2600, how many non-members bought tickets?

6. Jennie purchased 3 packages of the cheaper pop and 4 packages of the more expensive pop for a total of \$57. Rob purchased 7 packages of the cheaper pop and 11 packages of the more expensive pop for a total of \$148. How much was the cheaper package of pop?

Solve.

7. $-3x - 2y + z = -3$
   $2x + 3y + 2z = 7$
   $x + y + z = 0$

8. $5x - y - 2z = 1$
   $-3x + 2y + 3z = 2$
   $x - 2y - z = -10$

9. $5x + y + 2z = 7$
   $-2x + 2y + 3z = -2$
   $2x + 3y + 2 = -12$

Graph the intersection.

10. $y \geq 2x - 1$
    $y \leq -(x-1)^2 + 3$

11. $x^2 + y^2 \leq 9$
    $y + x^2 \geq -1$

12. $3y - 2x < 6$
    $y > (x-2)^2 - 1$

Find the sum, if it exists.

13. $100 + 50 + 25 + \cdots$

14. $\frac{3}{5} + \frac{3}{25} + \frac{3}{125} + \cdots$

15. $-\frac{1}{5} + \frac{1}{25} + \left(-\frac{1}{125}\right) + \cdots$

16. Find the sum of the series $3+5+7+9+\cdots+57$.

17. Find the sum of the series $8+2-4-10\cdots-106$.

18. Find the sum of the series $6+9+12+15+\cdots+60$.

19. In a geometric progression, the first term is 256 and the common ratio is $\frac{3}{4}$. Find the 7th term.

20. In a geometric sequence, the first term is $3\sqrt{2}$ and the 7th term is $24\sqrt{2}$. Find the common ratio.

21. In a geometric sequence, the first term is 2 and the the 7th term is 250. Find the common ratio.

22. In a geometric progression, the first term is 243 and the common ratio is $\frac{2}{3}$. Find the 8th term.

23. In a geometric progression, the first term is 100 and the common ratio is $\frac{1}{2}$. Find the 12th term.

24. The first term of a geometric sequence with common ratio $\sqrt{7}$ is 4. What is the 41st term?

25. In how many ways can 12 people be divided into hockey teams of 6 players each?

26. How many ways can 3 pencils be chosen from a box of 12?

27. Out of 20 softball players on a team, 2 are selected at random to be co-captains. How many different outcomes are possible?

28. Seth is to select a center and guard for his basketball team from a group of 7 people. Find the number of possible outcomes.

29. There are 20 girls in a beauty pageant. A queen, a first runner-up and a second runner-up are to be chosen. How many different outcomes are possible?

30. In a track meet, 7 runners compete for first, second and third place. How many different ways can the runners place if there are no ties?

31. There are 5 nickels, 7 dimes, and 9 pennies in a coin purse. Suppose two coins are to be selected, without replacing the first one. What is the probability of selecting a penny and then a dime?

32. There are 6 plates, 5 saucers, and 5 cups on the counter. Andrew accidentally knocks off two and breaks them. What is the probability that he broke a cup and a saucer, in that order?

33. If you roll a die and pick a marble from a bowl containing 5 white, 3 yellow, and 6 black marbles, what is the probability that you will roll a 2 on the die and a yellow marble?

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Answer List

1.	$(-2,5)$, $(1,2)$	2.	$(1,0)$, $(-3,2)$	3.	$(3,9)$, $(-1,1)$
4.	$x+y=75$ $4x+5y=340$	5.	200	6.	\$7.00
7.	$(-3,5,-2)$	8.	$(0,7,-4)$	9.	$(1,-6,4)$
10.	*graph*	11.	*graph*	12.	*graph*
13.	200	14.	$\frac{3}{4}$	15.	$-\frac{1}{6}$
16.	840	17.	-980	18.	627
19.	$\frac{729}{16}$	20.	$\pm\sqrt{2}$	21.	$\pm\sqrt{5}$
22.	$\frac{128}{9}$	23.	$\frac{25}{512}$	24.	$4(7)^{20}$
25.	924	26.	220	27.	190
28.	42	29.	6840	30.	210
31.	$\frac{3}{20}$	32.	$\frac{5}{48}$	33.	$\frac{1}{28}$

Catalog List

1.	TRI JH 7	2.	TRI JH 8	3.	TRI JH 2
4.		5.	CM1 DE 32	6.	CM1 DE 45
7.	ALG QD 27	8.	ALG QD 26	9.	ALG QD 28
10.		11.		12.	
13.	TRI LK 13	14.	TRI LK 38	15.	TRI LK 32
16.	TRI LG 1	17.	TRI LG 4	18.	TRI LG 2
19.	TRI LH 28	20.	TRI LH 29	21.	TRI LH 31
22.	TRI LH 26	23.	TRI LH 25	24.	CM1 QD 62
25.	MMA EE 26	26.	PRE PI 34	27.	SAT EB 26
28.	MMA EE 22	29.		30.	
31.	MMA EE 53	32.	MMA EE 56	33.	MMA EE 66