Algebra I Part II 70A Name_____

1. Two dice are rolled. What is the probability that the sum of the numbers rolled is 6?

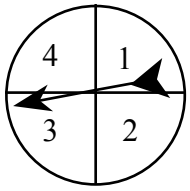
2. A single die is rolled three times. What is the probability that the next roll will produce a number greater than 3?

3. Latoya rolls a fair die seven times and each time she rolls a three. What is the probability that on her next roll she will roll a two?

4. A bag contains 4 green marbles and 5 pink marbles. A marble is drawn and dropped back into the bag. Another marble is drawn and dropped back into the bag. Both marbles were green. If another marble is drawn, what is the probability that it is green?

5. A fair coin is tossed four times. What is the probability that the first two tosses will come up tails and the last two tosses will come up heads?

6. The spinner shown is spun 4 times. What is the probability that it will stop on 3, 1, 4 and 2 in that order?



7. Two dice are rolled. What is the probability that the sum of the numbers rolled is 3?

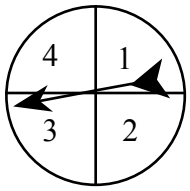
8. A single die is rolled five times. What is the probability that the next roll will produce a number less than 5?

9. Maria rolls a fair die six times and each time she rolls a one. What is the probability that on her next roll she will roll a five?

10. A bag contains 6 blue marbles and 3 black marbles. A marble is drawn and dropped back into the bag. Another marble is drawn and dropped back into the bag. Both marbles were black. If another marble is drawn, what is the probability that it is black?

11. A fair coin is tossed three times. What is the probability that the first two tosses will come up heads and the third toss will come up tails?

12. The spinner shown is spun 2 times. What is the probability that it will stop on 2 and 4 in that order?



Factor.

13. $x^2 + 2x - 3$

14. $x^2 + 11x + 28$

15. $-14j + j^2 + 45$

16. Simplify. Write the answer as a simple fraction with all exponents positive. $\dfrac{\frac{2}{j} + \frac{j}{k}}{\frac{2}{k}}$

17. Simplify. Write the answer as a simple fraction with all exponents positive. $\dfrac{r^{-2} + s^2 r^{-3}}{r^{-2} s^4}$

18. Simplify. Write the answer as a simple fraction with all exponents positive. $\dfrac{3 - \frac{y}{z}}{\frac{5}{z} + z}$

19. Simplify. Write the answer as a simple fraction with all exponents positive. $\dfrac{y^{-2} + z^{-1}}{y^{-2}}$

Solve the system by the elimination method:

20. $4x + y = -18$

$x - y = -7$

21. Solve the system by the elimination method: $3x - 2y = 0$

$2x + 3y = -13$

22. Solve the system by substitution:

$6x + y = 19$

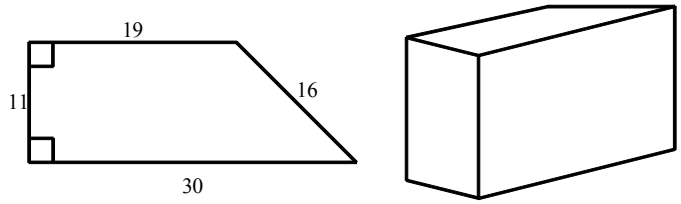
$-8x + 4y = 12$

23. Solve the system by substitution:

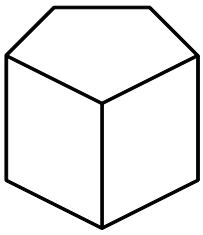
$x - 5y = 20$

$x - 6y = 23$

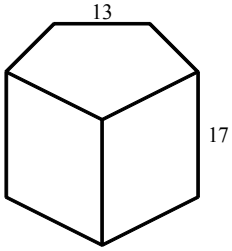
24. A base of a right prism whose height is 8 inches is the trapezoid shown. Find the surface area of the prism. Dimensions are in inches.



25. The area of a base of a right pentagonal prism is 172 $in.^2$ and the length of a lateral edge is 13 in.. Find the volume of the right pentagonal prism.



26. Find the lateral surface area of this right prism whose bases are regular pentagons. Dimensions are in feet.



27. The experimental drug caused side effects in 16% of those who took it. If 656 experienced side effects, how many people took the experimental drug?

28. Gretel peeked around the bush and spied 510 gnomes gathered in the glen. If this was 70 percent more than Konstantine spied under the tree, how many gnomes did Konstantine spy?