1. $y=1 / 4 x-5$
2. $y=-3 x-1$
3. $j(x)=1 / 2(x-4)^{2}+1$
4. $g(x)=(x+1)^{2}-3$
5. $y=|x+3|+5$
6. $y=-2|x-4|+3$

Factor the following:
7. $x^{2}+5 x-14$
8. $3 x^{2}+13 x-10$
9. $x^{2}-10 x+16$

Solve using the given method:
10. quadratic formula

$$
x^{2}+3 x-7=0
$$

11. using square roots
$3(x+1)^{2}=75$
12. completing the square
$x^{2}-12 x=13$

Simplify:
Evaluate:
13. $\left(y^{0} x^{-3} w^{4}\right)^{3}$
14. $(\sqrt[4]{81})^{2}$
21. Find the probability that the sum when you roll two six-sided dice is 5 or 10 .
22. List the sample space when you toss a coin and then pick a marble from a bag with 1 red and 2 green marbles.
23. You draw one card from a standard deck of playing cards. What is the probability that the card is a diamond?
24. You roll two 6 -sided dice. Find the probabilities:
a. $P(s u m$ is 3$)$
b. P ( sum is at least 9 )
25. There are several kittens in a box: 5 orange, 4 yellow, and 11 purple kittens. Find the probability that you select an orange kitten and then another orange kitten:
a. When you replace the first kitten
b. You do not replace the first kitten.
26. You draw two cards from a standard deck. What is the probability that both are Kings:
a. With replacement
b. Without replacement
27. Complete the marginal frequencies, then use the two-way table to determine the following probabilities:

|  |  | Pet |  |
| :---: | :---: | :---: | :---: |
|  |  | Yes | No |
| ㅇㅇㄱ | Yes | 74 | 13 |
|  | No | 153 | 32 |

a. What is the probability that pet owners have a job?
b. What Is the probability that all those surveyed have a job and own a pet?
c. What is the probability that those with a job do not own a pet?
28. You draw one card from a standard deck. What is the probability that your card is a queen or a red card?
29. You roll one 6 -sided dice. What is the probability that you roll a 2 or a number less than 5 ?
30. In a survey of 20 people, 7 people said they prefer apples, 8 said they prefer bananas, and 3 people like both fruits. What is the probability that a randomly selected student prefers apples or bananas?

