SKILLS ASSESSMENT FOR COLLEGE ALGEBRA

Do you have the algebra skills for College Algebra? The skills needed to solve the problems on this assessment are skills required for College Algebra. To increase your chance of success, we encourage you to take this assessment and score it. If you score below 70%, we strongly recommend that you enroll in MAT1033 Intermediate Algebra, or visit your nearest Math Lab to brush up on your algebra skills before the start of the term.

1. Evaluate: $\dfrac{-9(5)-(-2)(7)-|3-11|}{-1+4(-3)}$

Simplify the following expression.

2. $-3(2k-5)+2(4k-3)-3+7k$

Solve each equation or inequality.

3. $6-(2+3a)+4a=-3(a-2)-4$

4. $0.09x+0.02(x+3)=1.27$

5. $\dfrac{x+3}{8}+\dfrac{x-5}{6}=1$

6. $|3k-1|+2=10$

7. $-5\le\dfrac{2}{3}x-1\le 7$

8. A garden is in the shape of a rectangle with a perimeter of 18 meters. The length is 3 meters more than twice the width. Find the length of the garden.

9. Graph: $y=-2x+3$

10. For the line $3x-2y=8$, find the slope and the x- and y-intercepts.

11. Find the equation of the line passing through the point $(-1, 5)$ and parallel to $9x+3y=8$. Write the answer in slope-intercept form.

12. Graph: $2x-y\ge 6$.

13. For the function $f(x)=\sqrt{x+1}$,

(a) Give the domain.

(b) Find $f(3)$.

14. Solve the system: $2x+3y=-6$
$3x+y=5$

15. If $f(x)=-3x^2+4x-2$ and $g(x)=4x+1$, find $(f+g)(x)$.

Perform the indicated operations.

16. $(4x-7)(3x+2)$

17. $(5x-2w)^2$

18. $\dfrac{x^3-2x^2-5x+6}{x-3}$

Factor each expression completely.

19. $16x^2-25y^4$

20. $12y^2-7y-12$

21. y^3-8

22. Multiply: $\dfrac{12m^3(m+2)}{(m+2)(m-3)}\cdot\dfrac{6(m-3)}{18m^5}$

23. Divide: $\dfrac{x^2-y^2}{4a^5b^7}\div\dfrac{x^2-3xy+2y^2}{12a^3b^{12}}$

24. Write $\frac{1}{2x}+\frac{2}{3y}-\frac{5}{6xy}$ as a single fraction.

25. Solve the equation: $1+\frac{1}{z}=\frac{72}{z^2}$

26. Solve the equation for *y*: $x=\frac{4(y-z)}{k}$

27. Simplify the following expression:

$$\sqrt[5]{64x^5y^8z^{12}}$$

28. Subtract: $5\sqrt{24}-7\sqrt{18}+3\sqrt{54}$

Solve each equation.

29. $2z^2+z-28=0$

30. $\sqrt[3]{7x}=\sqrt[3]{2x-5}$

31. $\sqrt{5-x}+3=x$

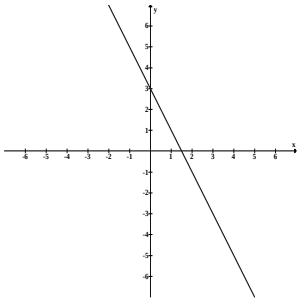
Perform the indicated operations. Express the answers in the form a + bi.

32. $(-1+8i)-(6+3i)-2i$

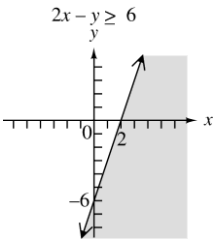
33. $\frac{6+i}{2-i}$

ANSWER KEY

1) 3
2) 9k + 6
3) {−1/2}
4) {11}
5) {5}
6) –7/3, 3
7) [–6, 12]
8) 7 meters
9)



10) m = 3/2; (0, −4); (8/3, 0)
11) $y = -3x + 2$
12)



13) (a) [−1, ∞); (b) 2
14) {(3, –4)}
15) $-3x^2 + 8x - 1$
16) $12x^2 - 13x - 14$
17) $25x^2-20wx+4w^2$
18) x^2+x-2
19) $(4x + 5y^2)(4x - 5y^2)$
20) (3y − 4)(4y + 3)
21) $(y - 2)(y^2 + 2y + 4)$
22) $\frac{4}{m^2}$
23) $\frac{3b^5(x+y)}{a^2(x-2y)}$
24) $\frac{3y+4x-5}{6xy}$
25) {−9, 8}
26) $y=\frac{kx+4z}{4}$
27) $2xyz^2\sqrt[5]{2y^3z^2}$
28) $19\sqrt{6}-21\sqrt{2}$
29) {−4, 7/2}
30) {−1}
31) {4}
32) $-7 + 3i$
33) $\frac{11}{5}+\frac{8}{5}i$

# CORRECT	SCORE
33	100
32	97
31	94
30	91
29	88
28	85
27	82
26	79
25	76
24	73
23	70
22	67
21	64
20	61
19	58
18	55
17	52
16	48
15	45
14	42
13	39
12	36
11	33
10	30
9	27
8	24
7	21
6	18
5	15
4	12
3	9
2	6
1	3
0	0