Intermediate Algebra
Chapters 1 and 2 Practice Test, Calculator Allowed

I. Evaluate the following expressions.

1. $|-2.3-5.6|$ 2. $\left(\frac{2}{3}\right)^{-4}$ 3. -7^0

II. Simplify the expressions. Write the result using positive exponents. Perform any possible numerical calculations.

4. $x^3 \cdot y^{-4} \cdot y^{10}$ 5. $\left(\frac{4x^3}{6xy^{-2}}\right)^{-2}$ 6. $\frac{x^5y^{-7}}{x^2y^4}$

III. Formulas.

7. The median price of a single-family home from 1980 to 1990 can be approximated by P(x) = 3421x + 61,000, where x = 0 corresponds to 1980 and x = 10 corresponds to 1990. Find the median price of a single-family home in 1985.

8. The cost to rent a car can be modeled by the linear function C(x) = 0.15x + 49, where the base rental cost is \$49 and a charge of \$0.15 is added for each mile driven. Find the y-intercept of the function. What does the y-intercept represent?

IV. Evaluate.

9. $f(-3)$ for $f(x) = 3x^2 - 6$

10. Find the slope of the line passing through the points $\left(-2, \frac{1}{3}\right)$ and (1, 2).

11. Find the *x*- and *y*-intercepts of the linear equation $y = 3x - \frac{3}{4}$.

12. Find the slope-intercept form of a line parallel to $y = 2 + 3x$, passing through $\left(\frac{2}{3}, 8\right)$

13. Find the slope-intercept form of a line perpendicular to $y = \frac{2}{3}x + 1$, passing through the point (–2, 3).

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Answers:

1. 7.9
2. $\frac{81}{16}$
3. -1
4. x^3y^6
5. $\frac{9}{4x^4y^4}$
6. $\frac{x^3}{y^{11}}$
7. $\$78{,}105$ is the median price of a single-family home in 1985.
8. $49\ or\ (0, 49)$. This represents the base cost, even if the car is not driven.
9. 21
10. $m = \frac{5}{9}$
11. $x - intercept = \frac{1}{4}, y - intercept = \frac{-3}{4}$
12. $y = 3x + 6$
13. $y = \frac{-3}{2}x$