4-5  Practice  

Writing a Function Rule  

Write a function rule that represents each sentence.

1. 5 less than one fourth of $x$ is $y$. \[ \frac{1}{4}x - 5 = y \]

2. 7 more than the quotient of a number $n$ and 4 is 9. \[ \frac{n}{4} + 7 = 9 \]

3. $P$ is 9 more than half of $q$. \[ \frac{1}{2}q + 9 \]

4. 8 more than 5 times a number is $-27$. \[ 5n + 8 = -27 \]

5. 1.5 more than the quotient of $a$ and 4 is $b$. \[ \frac{a}{4} + 1.5 = b \]

For Exercises 6–10, write a function rule that represents each situation.

6. The price $p$ of an ice cream is $3.95 plus $0.85 for each topping $t$ on the ice cream. \[ p = 0.85t + 3.95 \]

7. A babysitter’s earnings $e$ are a function of the number of hours $n$ worked at a rate of $7.25 per hour. \[ e = 7.25n \]

8. The price $p$ of a club’s membership is $30 for an enrollment fee and $12 per week $w$ to be a member. \[ p = 12w + 30 \]

9. A plumber’s fees $f$ are $75 for a house call and $60 per hour $h$ for each hour worked. \[ f = 60h + 75 \]

10. A hot dog $d$ costs $1 more than one-half the cost of a hamburger $h$. \[ d = 0.5h + 1 \]

11. José is 3 years younger than 3 times his brother’s age. Write a rule that represents José’s age $j$ as a function of his brother’s age $b$. How old is José if his brother is 5? \[ j = 3b - 3 ; 12 \]

12. A taxicab charges $4.25 for the first mile and $1.50 for each additional mile. Write a rule for describing the total rate $r$ as a function of the total miles $m$. What is the taxi rate for 12 miles? \[ r = 1.5(m - 1) + 4.25 ; \$ 20.75 \]
Write a function rule that represents each sentence.

1. 8 less than one third of $x$ is $y$.  \[ y = \frac{1}{3}x - 8 \]

2. 12 more than the quotient of a number $t$ and 7 is $v$.  \[ \frac{t}{7} + 12 = v \]

3. $z$ is 6 more than twice $y$.  \[ z = 2y + 6 \]

4. 10 more than 8 times a number $a$ is $b$.  \[ 8a + 10 = b \]

For Exercises 5–7, write a function rule that represents each situation.

5. The price $p$ of a large, cheese pizza is $7.95 plus $0.75 for each topping $t$ on the pizza.  \[ p = 0.75t + 7.95 \]

6. Jaquelyn’s earnings $m$ are a function of the number of lawns $n$ she mows at a rate of $12$ per lawn.  \[ m = 12n \]

7. The total fees $f$ of a book club membership are $10$ per month $m$ and a one-time administrative fee of $4.75$.  \[ f = 10m + 4.75 \]

8. Eric is 2 years younger than 2 times his sister’s age. Write a rule that represents Eric’s age $a$ as a function of his sister’s age $s$. How old is Eric if his sister is 11?  \[ a = 2s - 2 \quad \therefore 20 \]