1. Jeremy emptied his piggy bank which was full of only quarters and dimes. He realized that he had 16 coins which totaled $2.65. How many dimes did he have?

$-.25(q + d = 16)$

$.25q + .10d = 2.65$

$-.25q - .25d = -4$

$+\ .25q + .10d = 2.65$

$-.15d = -1.35$

$-.15 \quad -.15$

$d = 9$ dimes

2. The function f(x) = 37x + 20 models the total cost for Rachel to be a member at a gym for x months. What can be interpreted from the y-intercept of the function?

There is $20 fee

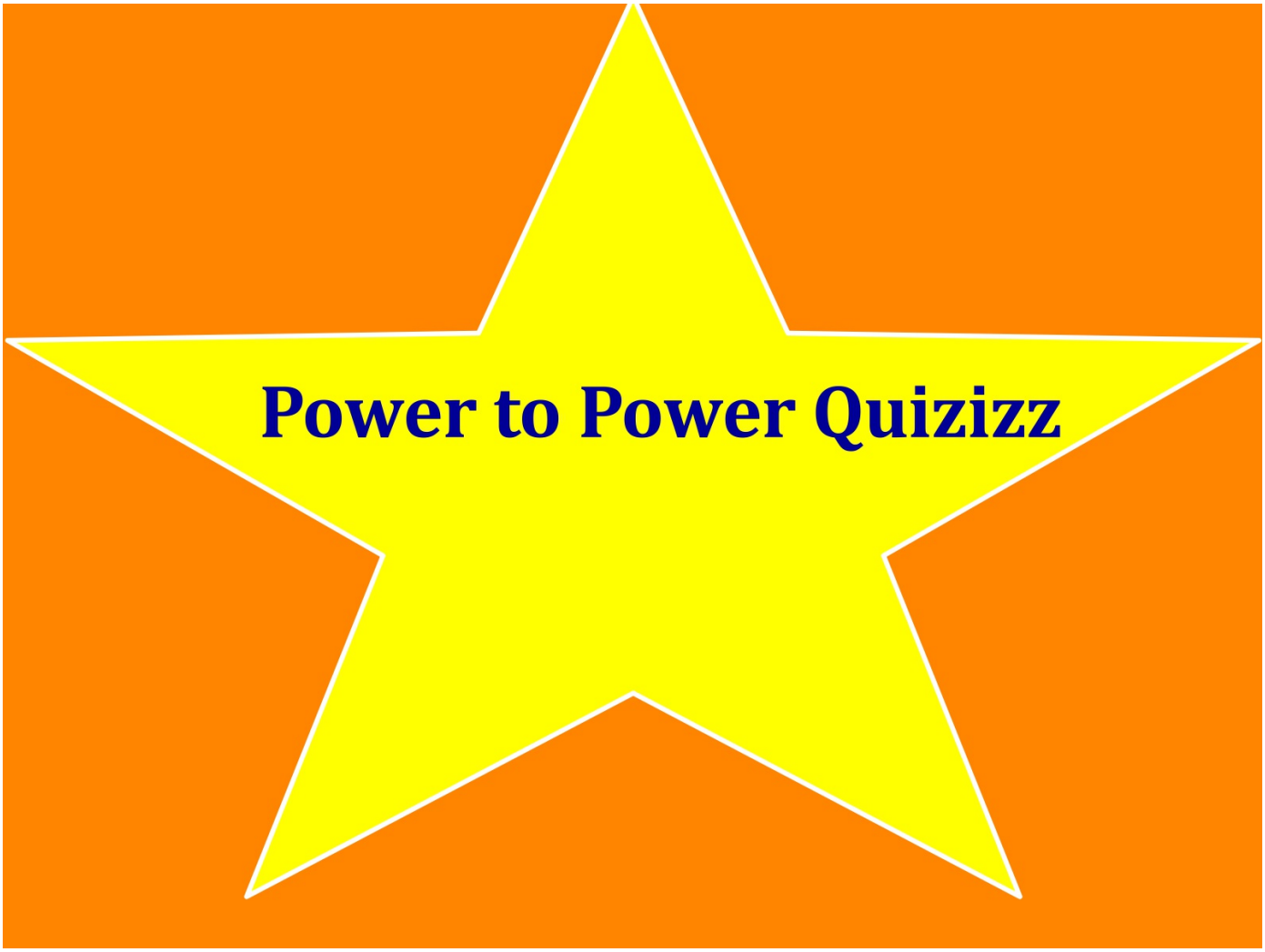
3. Evaluate f(-8) when $f(x) = x^2 - 6x + 12$

$f(-8) = (-8)^2 - 6(-8) + 12$

$64 + 48 + 12$

$f(-8) = 124$

$(-8, 124)$


Power to Power Quizizz

Dividing Monomials

To divide monomials, use the QUOTIENT RULE

$$\frac{x^a}{x^b} = x^{a-b}$$

KAMPLES

Directions: Find each quotient.

1. $\frac{x^5}{x^3}$ x^2 x^{5-3}	2. $\frac{k^{12}}{k^2}$ k^{10}	3. $\frac{m^3}{m^3} = 1$
4. $\frac{a^6b^4}{a^2b^3}$ a^4b	5. $\frac{p^7q^{16}}{p^4q^{12}}$ p^3q^4	6. $\frac{x^{20}z^2}{x^5z}$ $x^{15}z$

- **Examples with Coefficients:**
  - DIVIDE the coefficients.
  - SIMPLIFY the variables with the quotient rule.

7. $\frac{6x^4}{2x^3}$ $3x$

8. $\frac{14r^2s^2}{7rs}$ $2rs$

9. $\frac{-36c^2d^5}{4c^2d^3}$ $-9d^2$

10. $\frac{-15x^6y^5z}{-3x^5y^3}$ $5xy^2z$

11. $\frac{4n^5}{8n}$ $\frac{n^4}{2}$

12. $\frac{36m^9n^5}{54m^3n^2}$ $\frac{2m^6n^3}{3}$

$$\frac{n \cdot n \cdot n \cdot n \cdot \cancel{n}}{\cancel{n}}$$

$$\frac{n^2}{n^5} = n^{-3} \qquad n^{-3} = \frac{1}{n^3}$$

$$n^{-x} = \frac{1}{n^x}$$

$$\frac{\cancel{n} \cdot \cancel{n}}{n \cdot n \cdot n \cdot \cancel{n} \cdot \cancel{n}} = \frac{1}{n^3}$$

Directions: Simplify each expression completely.

13. $\frac{(3x^5)^2}{27x^3}$

$\frac{9x^{10}}{27x^3} = \boxed{\frac{x^7}{3}}$

14. $\frac{(2a^2b^4)^3}{4a^3b^7}$

$\frac{8a^6b^{12}}{4a^3b^7}$

$\boxed{2a^3b^5}$

15. $\frac{12w^9v^4}{(4wv)^2}$

$$\frac{12w^9v^4}{16w^2v^2}$$

$$\boxed{\frac{3w^7v^2}{4}}$$

16. $\frac{(2cd^4)^4}{(2c^2d^3)^2}$

$$\frac{16c^4d^{16}}{4c^4d^6}$$

$$\boxed{4d^{10}}$$

19. $\left(\frac{4ab^2}{5ab}\right)^2$

$\frac{16a^2b^4}{25a^2b^2}$

$\frac{16b^2}{25}$

20. $\frac{(9x^5y^6)(4xy)}{6x^2y^4}$

$\frac{36x^6y^7}{6x^2y^4}$

$6x^4y^3$

23. $\dfrac{(2x^3)^2(3y^4)^3}{12x^4y^5}$

$(4x^6)(27y^{12})$

$\dfrac{108x^6y^{12}}{12x^4y^5}$

$9x^2y^7$

24. $\dfrac{(3m^2)^2(-4n^5)^2}{8m^3n^4}$

$(9m^4)(16n^{10})$

$\dfrac{144m^4n^{10}}{8m^3n^4}$

$18mn^6$

25. $\frac{(8cd^3)(-3c^4)}{6c^2d} - 9c^3d^2$

$\frac{-24c^5d^3}{6c^2d}$

$-4c^3d^2 - 9c^3d^2$

$\boxed{-13c^3d^2}$

26. $\frac{(8r^5s^2)(3r^3s^4)}{12rs^4} + 9r^7s^2$

$\frac{24r^8s^6}{12rs^4}$

$2r^7s^2 + 9r^7s^2$

$\boxed{11r^7s^2}$