

MTH 103E
Practice Quiz - Algebra Skills

Name _____

1. Simplify each expression completely.

a. $5x + 2x$

b. $4b \cdot 3b^2$

c. $\frac{8w^6}{2w^2}$

d. $(2x^2)^3$

e. $(x + 3)^2$

f. $\sqrt{25x}$

2. Solve each equation algebraically.

a. $3x - 7x + 2 = 5x - 4 + 1$

b. $\frac{x-2}{4} = 5$

c. $7 - 3(6 - x) = 6x - 5(x - 3)$

d. $x^2 = 16$

3. Determine if the point $(2,-5)$ is on the line $3x - 4y = -14$. Yes / No
4. Find the equation of the line that passes through the points $(6,-3)$ and $(8,1)$. Write your answer in the form $y = mx + b$.

Answer _____

5. Determine if the lines $5x + 2y = 7$ and $y = \frac{5}{2}x$ are parallel, perpendicular, or neither.

Answer _____

6. Factor.

a. $x^2 - 3x - 10$

b. $2x^2 - 13x + 15$

Ans: _____

Ans: _____

7. Solve the equation $3x^2 - 8x - 2 = 0$ by using the Quadratic Formula: The solutions of the equation $ax^2 + bx + c = 0$ are $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$, where $a \neq 0$. Simplify your answer.

Answer _____

8. Solve algebraically: $17x^2 + 4x - 7 = 3x - 5 + 2x^2$

Answer _____

9. Multiply and simplify: $(2\sqrt{7} + 4)(6 - \sqrt{7})$

Answer _____

10. Use the definitions of the functions f , g , and k , to evaluate the following.

$$f(x) = 4x - 5$$

$$g(x) = 7$$

$$k(x) = 3x^2 - 7x + 2$$

a. $f(-7)$

b. $g(-24)$

Ans _____

Ans _____

c. $k(-2)$

d. $f(p + 3)$

Ans _____

Ans _____

e. $k(a + h) - k(a)$

Answer _____