

NAME \_\_\_\_\_

MATH 096 REVIEW Free Response  
CHAPTER 6

Factor the polynomial completely. If the polynomial cannot be factored, write "prime."

1)  $x^2 - 9x + 20$

1) \_\_\_\_\_

2)  $64 - m^2$

2) \_\_\_\_\_

3)  $y^2 + 30y + 225$

3) \_\_\_\_\_

4)  $11(a + 15) - y(a + 15)$

4) \_\_\_\_\_

5)  $x^2 + 25$

5) \_\_\_\_\_

6)  $x^2 - x - 54$

6) \_\_\_\_\_

7)  $8x^3 - 80x^2 + 192x$

7) \_\_\_\_\_

8)  $5a^2 + 5ab - 8a - 8b$

8) \_\_\_\_\_

9)  $5x^2 - 43x + 56$

9) \_\_\_\_\_

10)  $243 - 3x^2$

10) \_\_\_\_\_

11)  $4t^2 + t - 5$

11) \_\_\_\_\_

12)  $256x - x^5$

12) \_\_\_\_\_

13)  $-yz^5 - y^5z$

13) \_\_\_\_\_

14)  $343x^3 - 1$

14) \_\_\_\_\_

15)  $6x^3 - 384$

15) \_\_\_\_\_

**Solve the equation.**

16)  $x^2 + 6x = 72$

16) \_\_\_\_\_

17)  $x(x - 4) = 12$

17) \_\_\_\_\_

18)  $5x(5x - 7)(8x + 5) = 0$

18) \_\_\_\_\_

19)  $9t^3 - 64t = 0$

19) \_\_\_\_\_

20)  $t^2 + 5t - 24 = 0$

20) \_\_\_\_\_

21)  $17x^2 = 8x$

21) \_\_\_\_\_

**Solve.**

22) A triangular piece of glass is being cut so that the height of the triangle is 4 inches shorter than twice the base. If the area of the triangle is 168 square inches, how long is the height of the triangle?

22) \_\_\_\_\_

23) The sum of two numbers is 16 and the sum of their squares is 146. Find the numbers.

23) \_\_\_\_\_

24) A window washer accidentally drops a bucket from the top of a 400-foot building. The height  $h$  of the bucket after  $t$  seconds is given by  $h = -16t^2 + 400$ . When will the bucket hit the ground?

24) \_\_\_\_\_

25) One leg of a right triangle is 21 inches longer than the smaller leg, and the hypotenuse is 24 inches longer than the smaller leg. Find the lengths of the sides of the triangle.

25) \_\_\_\_\_