

This self-test may be taken only after you have completed all of the exercises indicated on your course-content/pacing sheet.

0600 - Self Test 5

**SELF-TEST REVIEW
FOR TEST 5: FACTORING AND APPLICATIONS**

Factor completely:

1. $28p - 49$
2. $20M^3 + 28M^2$
3. $15x^6 - 21x^5 + 12x^3$
4. $x^2 - 4x - 12$
5. $y^2 + 5y + 4$
6. $m^2 - 19m + 18$
7. $t^2 + t - 72$
8. $6x^2 - 11x - 10$
9. $2k^2 - k + 3$
10. $12B^2 + 28B + 8$
11. $9D^2 + 30D + 25$
12. $36 - a^2$
13. $12p^2 + 6p + 3$
14. $5t^3 - 45t$
15. $V + 2V - 8$

Solve each of the following equations.

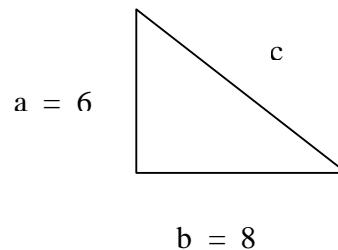
16. $(x - 7)(x + 2) = 0$
17. $(3y - 1)(7y + 2) = 0$
18. $4w(w + 6) = 0$
19. $t^2 - 3t - 18 = 0$
20. $2x^2 - x = 0$
21. $n^2 + n = 6$
22. $3x^2 - 10 = 13x$
23. $2p^2 - 72 = 0$
24. $12T^3 + 60T^2 + 75T = 0$
25. $2x^2 - 9 = x^2$

26. Find each square root.

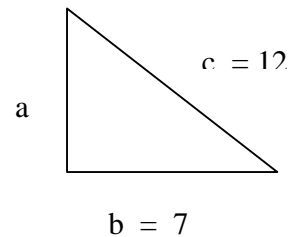
- a) $\sqrt{81}$
- b) $-\sqrt{25}$
- c) $\sqrt{-25}$
- d) $\sqrt{0}$
- e) $\sqrt{\frac{36}{25}}$
- f) $\sqrt{0.49}$

27. Find the length of the missing side of each triangle below.

a)



b)



28. The length of a rectangle is 12 feet and its width is 5 feet. How long is its diagonal?
29. The guy wire for a 30 foot pole is 40 feet long. How far from the base of the pole is the wire attached?
30. A 20 meter ladder is leaning against a wall. The bottom of the ladder is 8 meters from the wall. How far up the wall does the ladder reach?

(TURN)

Answers:

1. $7(4p - 7)$
2. $4M^2(5M + 7)$
3. $3x^3(5x^3 - 7x^2 + 4)$
4. $(x - 6)(x + 2)$
5. $(y + 1)(y + 4)$
6. $(m - 1)(m - 18)$
7. $(t + 9)(t - 8)$
8. $(3x + 2)(2x - 5)$
9. prime, cannot be factored
10. $4(3B + 1)(B + 2)$
11. $(3D + 5)^2$ or $(3D + 5)(3D + 5)$
12. $(6 + a)(6 - a)$
13. $3(4p^2 + 2p + 1)$
14. $5t(t + 3)(t - 3)$
15. $(V + 4)(V - 2)$
16. $x = 7, x = -2$
17. $y = \frac{1}{3}, y = -\frac{2}{7}$
18. $w = 0, w = -6$
19. $t = 6, t = -3$
20. $x = 0, x = \frac{1}{2}$
21. $n = 2, n = -3$
22. $x = -\frac{2}{3}, x = 5$
23. $p = 6, p = -6$
24. $T = 0, T = -\frac{5}{2}$
25. $x = 3, x = -3$
26. a) 9 b) -5 c) undefined
d) 0 e) $\frac{6}{5}$ f) 0.7
27. a) 10 b) $\sqrt{95}$
28. 13 feet
29. $\sqrt{700}$ feet
30. $\sqrt{336}$ meters