

Name: Key Hr: _____

Practice Test for Unit 1
(Chapter 1 and 2)

1. Determine if $\sqrt{49}$ is rational or irrational. (1 pt)

- a. Rational
b. Irrational

1. rational (A)

2. Determine if $36^{\frac{1}{3}}$ is rational or irrational. (1 pt)

- a. Rational
b. Irrational

2. irrational (B)

3. Find a value for n that makes the equation true. (3 pts)

$$(x^n)^{18} = x^9$$

3. $\frac{1}{2}$

Simplify. All exponents must be positive and variables only represented once. (3 pts each)

4. $2^{\frac{1}{2}} \cdot 2^{\frac{3}{4}}$

4. $2^{\frac{5}{4}}$

5. $\left(\frac{3}{4}\right)^3$

5. $\frac{27}{64}$

6. $(2x^5y^4)^3$

6. $8x^{15}y^{12}$

7. $2x^{-5}$

7. $\frac{2}{x^5}$

Simplify. All exponents must be positive and variables only represented once. (3 pts each)

8. $\frac{x^{\frac{1}{7}}}{x}$

8. $\frac{1}{x^{\frac{6}{7}}}$

9. $-5x^0$

9. -5

10. $\left(\frac{12a^2b^2c}{4a^{-3}b^4c^4}\right)^{-3}$

$\left(\frac{3A^5}{B^2C^3}\right)^{-3}$

10. $\frac{B^6C^9}{27A^{15}}$

11. $\frac{16x^{\frac{2}{3}}y^2z^{\frac{1}{3}}}{24x^{\frac{2}{15}}y^{-3}z^{\frac{1}{3}}}$

11. $\frac{2x^{\frac{1}{5}}y^5}{3}$

12. $(16n^6)^{\frac{3}{4}}$

12. $8n^{\frac{9}{2}}$

13. Rewrite the expression $(3x^2y^3)^{\frac{1}{4}}$ in radical form. (2 pts)

13. $\sqrt[4]{3x^2y^3}$

14. Rewrite the expression $\sqrt[3]{(2ab)^3}$ (2 pts)

14. $(2ab)^{\frac{3}{3}}$

Given the polynomial $4x - 3x^2 + 3x + 2 + 9x^2$ identify the stated information from the provided list below. (1 pt each)

a. $10x^2 + 3x + 2$	b. $(6x+1)(x+1)$	c. quadratic
d. 4	e. trinomial	f. $(3x+1)(2x+2)$
g. $6x^2 + 7x + 2$	h. 6	i. monomial
j. cubic	k. $(2x+1)(3x+2)$	l. 9
m. $(6x+2)(x+1)$	n. 2	o. linear
p. binomial	q. -3	

15. Standard Form

15. $6x^2 + 7x + 2$ (g)

16. Leading Coefficient

16. 6 (h)

17. Name based on degree

17. quadratic (c)

18. Name based on # of terms

18. trinomial (e)

19. Constant

19. 2 (n)

20. Factored Form

20. $(2x+1)(3x+2)$ (k)

Perform the operation and simplify. Write your answer in standard form. (3 pts each)

21. $(5m^3 + 4m - 6) - (4m^2 - 2m + 1)$

21. $5m^3 - 4m^2 + 6m - 7$

22. $(3x+5)^2$

22. $9x^2 + 30x + 25$

23. $(4x+5)(3x+1)$

23. $12x^2 + 19x + 5$

24. $(3x+4)(7x^2-2x-3)$

$21x^3 - 6x^2 - 9x$
 $+ 28x^2 - 8x - 12$

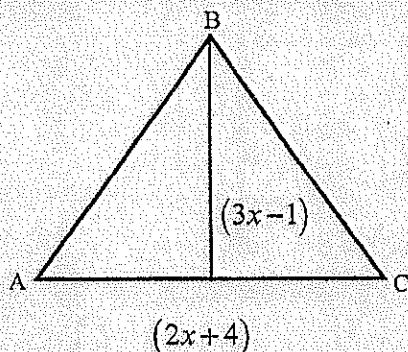
24. $21x^3 + 22x^2 - 17x - 12$

25. $(2a^2 - 4a - 3) + (a^2 + 8a - 5)$

25. $3a^2 + 4a - 8$

Find the AREA of $\triangle ABC$. Write your answer in standard form: (3 pts)

26.



26. $\underline{3x^2 + 5x - 2}$

$\frac{1}{2} (2x+4)(3x-1)$
 $\frac{1}{2} (6x^2 + 10x - 4)$

Factor each expression completely. (3 pts each)

27. $n^2 - 7n + 10$

27. $\underline{(n-5)(n-2)}$

28. $\sqrt{4w^2 - 19}$
 $(2w+3)(2w-3)$

28. $\underline{(2w+3)(2w-3)}$

29. $5x^3 + 20x^2 + 4x + 16$
 $5x^2(x+4) + 4(x+4)$

29. $\underline{(5x^2+4)(x+4)}$

30. $3y^2 + 3y - 6$
 $3(y^2 + y - 2)$

30. $\underline{3(y+2)(y-1)}$

31. $12a^4 + 16a^3 - 8a$
 $4a(3a^3 + 4a^2 - 2)$

31. $\underline{4a(3a^3 + 4a^2 - 2)}$

32. $10m^2 + 9m + 2$
 $(2m+1)(5m+2)$

32. $\underline{(2m+1)(5m+2)}$

33. $w^2 - 100$

33. $\underline{(w-10)(w+10)}$

34. $6y^3 - 3y^2 - 2y + 1$
 $3y^2(2y-1) - 1(2y-1)$

34. $\underline{(3y^2-1)(2y-1)}$

Give one value of b that would make the following polynomial factorable. (4 pts)

35. $x^2 + bx - 16$

1. 16
2. 8
4. 4

35. $\underline{\pm 15, \pm 6, 0}$

36. Mrs. Oswald writes the equation $x^2 + 4x - 12$ on the board. Parks says that it can be factored to equal $(x+4)(x-3)$. Austin says that it cannot be factored at all. Which student do you agree with, if any, and why? (4 pts)

$x^2 + 4x - 12$

1. 12
3. 6
3. 4

Nobody because it factors to $(x-2)(x+6)$