COLLEGE REVIEW MATH
REVIEW SECT. 2F & 2G

Name _____

Solve each equation by "grouping".

1) $2x^3 + 7x^2 - 18x - 63 = 0$

2) $3x^5 - 1 + x^3 - 3x^2 = 0$

Solve each equation using quadratic "substitution".

3) $2x^4 - 7x^2 - 4 = 0$

4) $x - x^{1/2} = 30$

List all possible p's, q's and p/q's for the following polynomial equations. Do not solve.

5) $3x^4 + 6x^2 - x - 6 = 0$

p: _____

q: _____

p/q: _____

6) $4x^3 + 9x^2 = 10$

p: _____

q: _____

p/q: _____

Solve each equation using the rational root theorem (mind your p's & q's).

7) $3x^3 - 4x^2 - 35x + 12 = 0$

8) $2x^4 + 18x^3 + 32x^2 - 36x = 16$

9) $2x^5 + 14x^4 + 28x^3 + 56x^2 + 80x = 0$

Find the sum and product of the roots for each equation.

10) $8y^2 + 6y - 3 = 0$

sum = _____

prod = _____

11) $x^3 + x^2 - x + 12 = 0$

sum = _____

prod = _____

12) $10x^6 - 3x^4 + x - 8 = 0$

sum = _____

prod = _____

13) $9n^5 + 6n^4 + n^3 = 24$

sum = _____

prod = _____

Use the sum and product formulas to write a quadratic equation for the given roots.

14) 1/2 and 3/5

15) $-4 \pm 3i$

16) $4 \pm \sqrt{7}$

17) $\frac{6 \pm 2i\sqrt{3}}{5}$

Write the cubic equation that has the given roots.

18) $7 \pm \sqrt{5}$ and -2

19) $\frac{1 \pm i\sqrt{3}}{2}$ and 3