4pts 1. Simplify $\dfrac{3-\frac{2}{3}}{2+\frac{1}{5}}$

5pts 2. Simplify $\dfrac{x^9y^7/5}{x^5y^6/40}$

5pts 3. Simplify $\dfrac{\frac{x}{3}-\frac{3}{x}}{1+\frac{x-3}{x}}$

5pts 4. Solve $x+4=\dfrac{12}{x}$

4pts 5. Solve $\dfrac{3x+1}{x-4}=\dfrac{x+9}{x-4}$

5pts 6. It takes John 6 hours to paint a room. His father can paint the same room in 4 hours. How long should it take if they painted the room together?

5pts 7. The sum of a number and 20 times its reciprocal is 9. Find the number.

4pts 8. Divide as indicated $\frac{24x^8 + 30x^6 - 12x^4}{6x^5}$

5pts 9. Divide as indicated $\frac{18x^9y^7 - 24x^8y^4 + 12x^6y^3}{6x^6y^3}$

5pts 10. Use long division to solve $\frac{15x^2 - 7x - 4}{3x + 1}$

5pts 11. Solve P + Prt = A for t

4pts 12. Evaluate $\sqrt[3]{\frac{27}{64}}$

4pts 13. Multiply $\left(4-\sqrt{5}\right)\left(7+\sqrt{5}\right)$

4pts 14. $6\sqrt{7x}+9\sqrt{7x}-11\sqrt{7x}=$

4pts 15. Rationalize the denominator: $\frac{2x}{\sqrt{5}}$

5pts 16. A 26 foot ladder leans against a building. If the base of the ladder is 10 feet from the base of the building, how high up the building will the ladder reach?

5pts 17. Solve by factoring $x^2 - 16x + 48 = 0$

In problems 18 & 19 solve by using the quadratic formula. $\left[x=\frac{-b\pm\sqrt{b^2-4ac}}{2a}\right]$

5pts 18. $3x^2 + 21x + 18 = 0$

5pts 19. $x^2 - 5x + 7 = 0$

6 pts 20. Graph $y = (x - 1)^2 - 4$

6pts 21. Graph $y = x^2 + 6x + 5$