

On my honor, I have neither given nor received unauthorized aid on this assignment. \_\_\_\_\_

**Solve each equation by factoring.**

1)  $5a^2 + 21a + 18 = 0$

2)  $20r^2 + 28r = 0$

3)  $35v^2 + 12v + 1 = 0$

4)  $21v^2 - 98v + 105 = 0$

5)  $5m^2 - 32m - 21 = 0$

6)  $10b^2 - b - 24 = 0$

7)  $2n^2 - 13n - 24 = 0$

8)  $28x^2 + 36x - 40 = 0$

9)  $18b^2 + 150b + 168 = 0$

10)  $21n^2 - 3n - 18 = 0$

**Solve each equation with the quadratic formula. Leave answers in radical form if not rational.**

11)  $7m^2 - 16 = 0$

12)  $5x^2 + x - 18 = 0$

13)  $3m^2 + 10m + 3 = 0$

14)  $8a^2 - 8a - 22 = 0$

$$15) 3x^2 - 48 = 0$$

$$16) 3x^2 + 9x - 30 = 0$$

$$17) 4n^2 - 12n - 135 = 0$$

$$18) 2p^2 - 5p - 33 = 0$$

$$19) p^2 + 8p - 20 = 0$$

$$20) 5x^2 - 3x - 8 = 0$$

**Simplify each expression.**

$$21) \frac{3x}{5x+6} + \frac{4x}{x-2}$$

$$22) \frac{3}{3v+12} - \frac{5}{3v}$$

$$23) \frac{4}{r+1} - \frac{4r}{r-2}$$

$$24) \frac{6}{5x} - \frac{2}{2x+3}$$

$$25) \frac{3b+4}{b-4} - \frac{3b}{b-1}$$

$$26) \frac{4}{v-5} + \frac{2}{v-1}$$

$$27) \frac{6n-6}{5n-4} + \frac{3n}{n+5}$$

$$28) \frac{2}{10a^2-4a} + \frac{3}{2}$$

$$29) \frac{5n}{6n-6} - \frac{5}{2}$$

$$30) \frac{4}{2} - \frac{p-1}{3p+2}$$

**Simplify.**

$$31) -10\sqrt{40p^5}$$

$$32) 9\sqrt{162x^4}$$

$$33) 4\sqrt{210x}$$

$$34) -6\sqrt{252x}$$

$$35) -\sqrt{144x}$$

$$36) 6\sqrt{42n}$$

$$37) 7\sqrt{48b^2}$$

$$38) 6\sqrt{700n^5}$$

$$39) 9\sqrt{72k^2}$$

$$40) -8\sqrt{50m^5}$$

$$41) -3\sqrt{20} - 3\sqrt{2} - 3\sqrt{8}$$

$$42) 3\sqrt{12} + 2\sqrt{3} + 3\sqrt{3}$$

$$43) 3\sqrt{3} - 2\sqrt{3} - 2\sqrt{5}$$

$$44) -2\sqrt{45} - 2\sqrt{8} - 3\sqrt{5}$$

$$45) -3\sqrt{24} - 2\sqrt{12} - 3\sqrt{54}$$

$$46) -\sqrt{8} - 2\sqrt{5} + 3\sqrt{8}$$

$$47) -2\sqrt{5}(4\sqrt{2} + \sqrt{10})$$

$$48) -5\sqrt{3}(-\sqrt{3} + 5)$$

$$49) -3\sqrt{5}(\sqrt{3} + \sqrt{5})$$

$$50) \sqrt{3}(-5\sqrt{3} + 3)$$

$$51) -\sqrt{15}(-\sqrt{5} + 4)$$

$$52) \sqrt{3}(5 - 2\sqrt{10})$$

$$53) \frac{4}{4 + 3\sqrt{3}}$$

$$54) \frac{\sqrt{3}}{2 - 2\sqrt{5}}$$

$$55) \frac{2}{\sqrt{2} + \sqrt{5}}$$

$$56) \frac{5 - 3\sqrt{5}}{5 + 3\sqrt{3}}$$

$$57) \frac{-1 - \sqrt{5}}{4 - \sqrt{5}}$$

$$58) \frac{\sqrt{5} - 3}{4 - 4\sqrt{2}}$$