Algebra 2 Name_____

9-4 Rational Expressions HW

Date_____

Simplify each expression.

1) $\frac{18b^2 - 12b}{18b^3}$

2) $\frac{7b^2 - 42b}{b - 6}$

3) $\frac{b - 7}{8b^2 - 56b}$

4) $\frac{15k^2 - 25k}{35k}$

5) $\frac{45m^2 - 72m}{18m^2 + 90m}$

6) $\frac{14x^2 + 70x}{35x^2 + 49x}$

7) $\frac{12x^3 - 24x^2 + 12x}{12x^2 + 12x}$

8) $\frac{10p + 12}{6p^2 - 16p + 10}$

9) $\frac{4(x + 10)}{4(x + 4)} \cdot \frac{x + 4}{4}$

10) $\frac{x + 3}{(x + 3)(x - 3)} \div \frac{8x}{4x^2(x - 3)}$

11) $\dfrac{7v^2 - 28v}{3v + 15} \div \dfrac{v - 4}{v^2 - 4v - 45}$

12) $\dfrac{4p - 28}{4p - 24} \cdot \dfrac{p^2 - 10p + 24}{p^2 - 2p - 35}$

13) $\dfrac{40b^2 + 32b}{8b} \cdot \dfrac{5b + 10}{10b^3 + 8b^2}$

14) $\dfrac{v - 9}{2v + 8} \div \dfrac{5v^2 - 20v}{v^2 - 16}$

Solve.

15) $6x - 7y = 18$
$-4x + 8y = 8$

Simplify.

16) $-2(-5i)(-7 + 5i)$

Solve each equation.

17) $-10 - \left|8n\right| = -58$

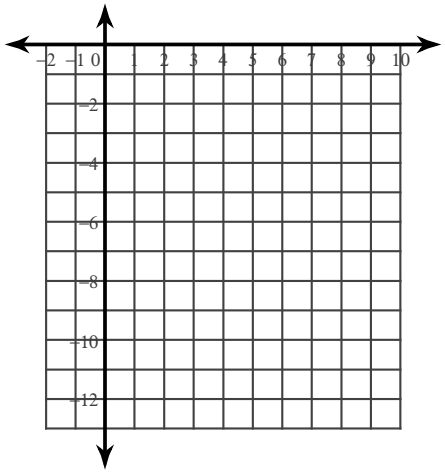
18) $2 + 5\left|9x - 8\right| = 7$

Solve each equation. Hint: Use the quadratic formula - your answer should have imaginary (complex) numbers in it.

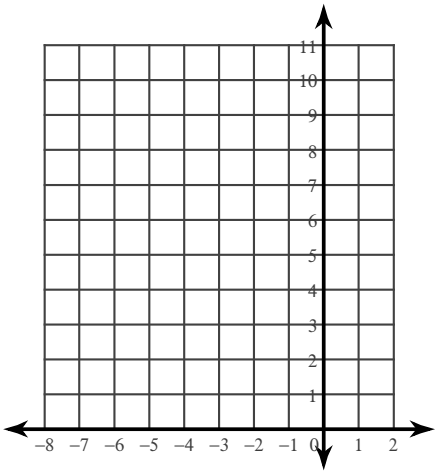
19) $-7 = 3n + 12n^2$

Graph each equation.

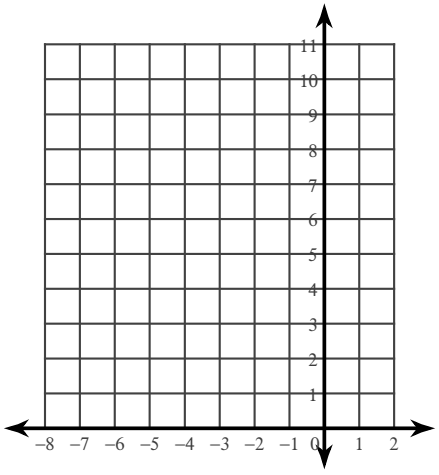
20) $y = -2x^2 + 12x - 22$



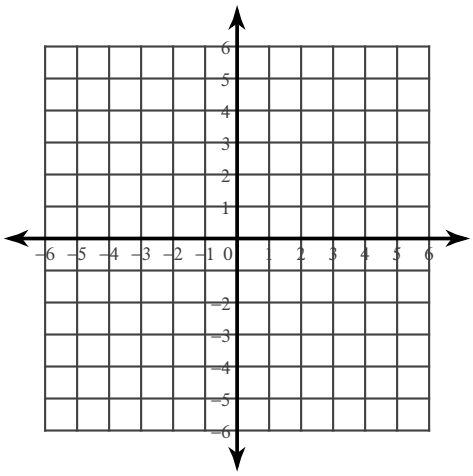
21) $y = 2(x + 1)^2 + 2$



22) $\frac{1}{2}(y - 2) = (x + 3)^2$

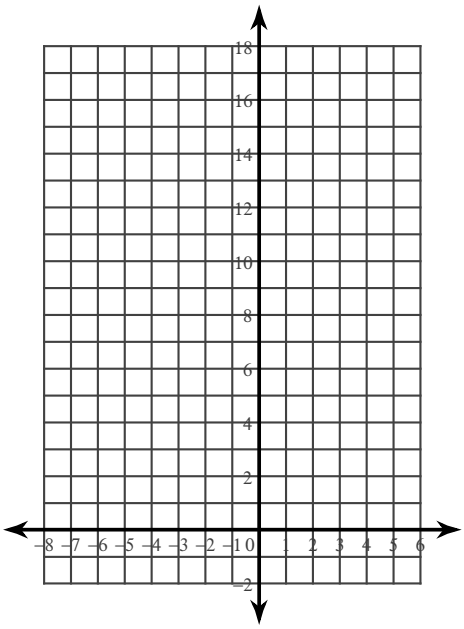


23) $y = -|x - 1| + 3$



Graph the equation.

24) $y = \frac{1}{3} \cdot 7^{x+1} - 2$



Solve.

25) $5x + 2y - 5z = -6$
$4x - 5y - 4z = 15$
$2x + 4y + 3z = 13$

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Simplify each expression.

1) $\frac{18b^2 - 12b}{18b^3}$

$\frac{3b - 2}{3b^2}$; $\{0\}$

2) $\frac{7b^2 - 42b}{b - 6}$

$7b$; $\{6\}$

3) $\frac{b - 7}{8b^2 - 56b}$

$\frac{1}{8b}$; $\{0, 7\}$

4) $\frac{15k^2 - 25k}{35k}$

$\frac{3k - 5}{7}$; $\{0\}$

5) $\frac{45m^2 - 72m}{18m^2 + 90m}$

$\frac{5m - 8}{2(m + 5)}$; $\{0, -5\}$

6) $\frac{14x^2 + 70x}{35x^2 + 49x}$

$\frac{2(x + 5)}{5x + 7}$; $\left\{0, -\frac{7}{5}\right\}$

7) $\frac{12x^3 - 24x^2 + 12x}{12x^2 + 12x}$

$\frac{(x - 1)^2}{x + 1}$; $\{0, -1\}$

8) $\frac{10p + 12}{6p^2 - 16p + 10}$

$\frac{5p + 6}{(3p - 5)(p - 1)}$; $\left\{\frac{5}{3}, 1\right\}$

9) $\frac{4(x + 10)}{4(x + 4)} \cdot \frac{x + 4}{4}$

$\frac{x + 10}{4}$

10) $\frac{x + 3}{(x + 3)(x - 3)} \div \frac{8x}{4x^2(x - 3)}$ $\frac{x}{2}$

11) $\dfrac{7v^2 - 28v}{3v + 15} \div \dfrac{v - 4}{v^2 - 4v - 45}$

$\dfrac{7v(v - 9)}{3}$

12) $\dfrac{4p - 28}{4p - 24} \cdot \dfrac{p^2 - 10p + 24}{p^2 - 2p - 35}$ $\dfrac{p - 4}{p + 5}$

13) $\dfrac{40b^2 + 32b}{8b} \cdot \dfrac{5b + 10}{10b^3 + 8b^2}$

$\dfrac{5(b + 2)}{2b^2}$

14) $\dfrac{v - 9}{2v + 8} \div \dfrac{5v^2 - 20v}{v^2 - 16}$ $\dfrac{v - 9}{10v}$

Solve.

15) $6x - 7y = 18$
$-4x + 8y = 8$

$(10, 6)$

Simplify.

16) $-2(-5i)(-7 + 5i)$

$-50 - 70i$

Solve each equation.

17) $-10 - |8n| = -58$

$\{6, -6\}$

18) $2 + 5|9x - 8| = 7$ $\left\{1, \dfrac{7}{9}\right\}$

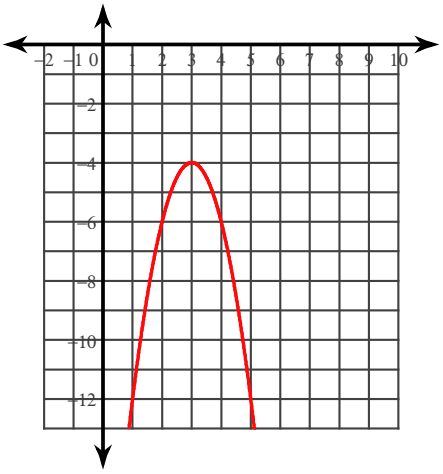
Solve each equation. Hint: Use the quadratic formula - your answer should have imaginary (complex) numbers in it.

19) $-7 = 3n + 12n^2$

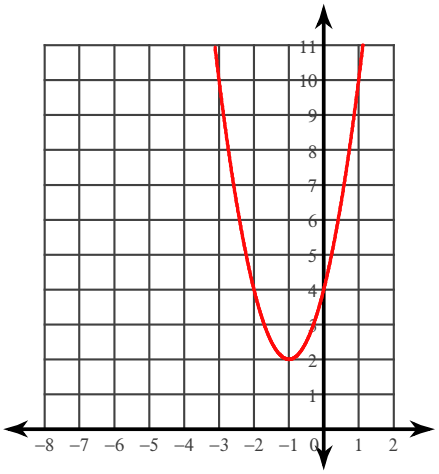
$\left\{\dfrac{-3 - i\sqrt{327}}{24}, \dfrac{-3 + i\sqrt{327}}{24}\right\}$

Graph each equation.

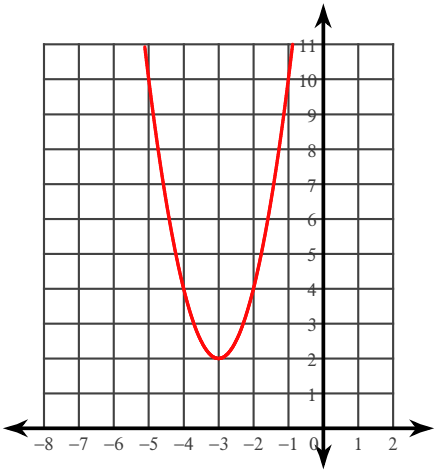
20) $y = -2x^2 + 12x - 22$



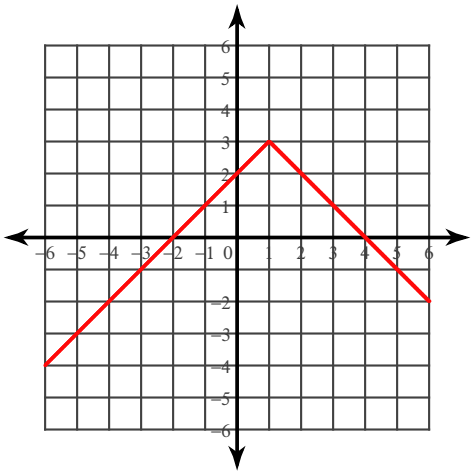
21) $y = 2(x + 1)^2 + 2$



22) $\frac{1}{2}(y - 2) = (x + 3)^2$

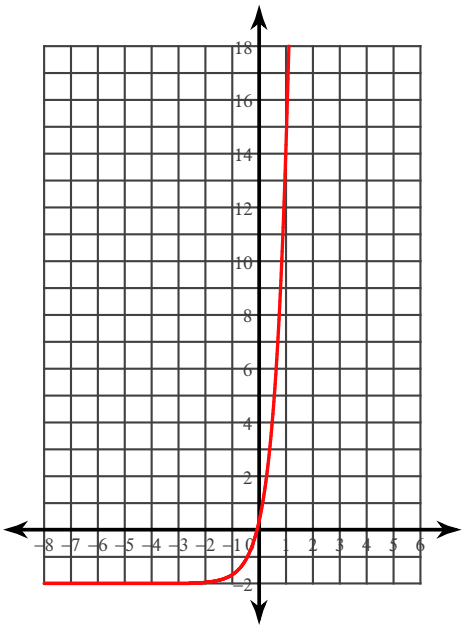


23) $y = -|x - 1| + 3$



Graph the equation.

24) $y = \frac{1}{3} \cdot 7^{x+1} - 2$



Solve.

25) $5x + 2y - 5z = -6$
$4x - 5y - 4z = 15$
$2x + 4y + 3z = 13$
$(5, -3, 5)$