

Algebra II Homework #15

- 1) Simplify: $\frac{4 + \frac{12}{2x-3}}{5 + \frac{15}{2x-3}}$
- 2) Factor: $32x^2 - 12xy - 40x + 15y$
- 3) Simplify: $\frac{2x-3}{x+5} - \frac{x^2-4x-19}{x^2+8x+15}$
- 4) Simplify: $-54(-2x^{-3}y^{-1}a^3)^{-2}(-3x^4y^2a^{-3})^{-3}$
- 5) Simplify: $\frac{6x-5+2x^3}{x+1}$
- 6) Solve: $\frac{5}{x-2} - \frac{2}{x+2} = \frac{3}{x^2-4}$
- 7) Solve: $\frac{1}{12xy} - \frac{5}{18xm} = \frac{7}{8ma}$ for y.
- 8) If Patty can finish her homework in 8 hours and Katelynn can finish the same homework assignment in 5 hours, how long would it take them to finish if they worked on it together?
- 9) Solve: $\frac{5}{x^2-7x+12} = \frac{2}{x-3} + \frac{5}{x-4}$
- 10) Solve: $\frac{4}{9xy} + \frac{1}{6yc} = \frac{5}{12xa}$ for a.
- 11) A swimming pool has a hole at the bottom which can completely drain it in 5 days. When the pool was new, Billy could fill it with his hose in 2 days. If Billy tries to fill his pool while it has the hole in it, how long will it take to fill up the pool?
- 12) Solve: $\frac{2x}{x+2} + 3x = \frac{-5}{x+2}$

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- 13) Solve: $\frac{9}{20xa} = \frac{5}{24my} - \frac{1}{18xm}$ for x.
- 14) It takes a cow 9 days to eat all the grass in a field. It takes a horse 8 days to eat all of the grass in that same field and it takes a sheep 12 days to eat all of that grass. If the farmer puts all three animals in the field at the same time, how long will the grass last?
- 15) Solve: $\frac{9}{x^2 + 7x + 10} = \frac{5}{x + 2} - \frac{3}{x + 5}$
- 16) Solve: $\frac{5}{14xy} - \frac{9}{49ma} = \frac{3}{28xa}$ for m.
- 17) A toddler playing in a perfectly clean house can mess it all up in 8 hours. If it takes 24 hours for his mother to completely clean the house WHILE her toddler is running around messing it up, how long would it take her to clean the house without her toddler there?
- 18) Solve: $\frac{4}{x - 4} = x + \frac{x}{x - 4}$
- 19) Solve: $\frac{4}{15xk} - 6 = \frac{1}{20ka}$ for x.
- 20) If Amy can finish her homework all by herself in 4 hours but can finish it in 3 hours when she works together with Elizabeth, how long would it take Elizabeth to finish that homework on her own?

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