

Solve the proportion.

1. $\frac{12}{4+x} = \frac{2}{4}$

2. $\frac{x+6}{6} = \frac{x+5}{-2}$

Simplify.

3. $\frac{4+6^2 \div 2 \cdot 3}{3^3+2}$

4. $(11 + 15 \div 3 - 10)^2$

Solve the equation. Use properties of equality to justify each step.

5. $3 = -9 + \frac{4x}{7}$

6. $\frac{2x-8}{-3} < 4$

7. $-5 + 3x + 2 \geq -15$

8. $2(4x - 7) + 11x = 24$

9. Use dimensional analysis to convert 28 meters per second into feet per minute.

10. Mr. Sacco, Mrs. Pischke, and Mr. Belby have decided to give up teaching and become Alaskan nomadic gold miners. At the end of the first week of mining, Mr. Sacco has 328 oz. of gold, Mrs. Pischke has 18 lbs. of gold, and Mr. Belby has 7.3 kg. of gold. At the end of the first week, who has found the most gold?

Taylor Swift recently dumped another boyfriend. She decides to write another multi-million dollar song about their relationship called, "You're not nice and I'm sad now." She makes \$0.99 per track sold on I-Tunes and \$12.99 per album. Her total profit is \$3,234,685.

$$0.99t + 12.99a = 3,234,685$$

11. Name the appropriate vocabulary for "t": _____

12. Name the appropriate vocabulary for "12.99a": _____

13. What does the "3,234,685" mean in context of the problem? _____

14. What does "0.99t" mean in context of the problem? _____