

Factor.

1. $x^2 + 6x - 7$

2. $x^2 - 17x + 72$

3. $9m + m^2 + 20$

4. $x^2 - 3x - 10$

5. $x^2 - 9x + 18$

6. $6g + g^2 - 16$

7. $x^2 + 4x - 32$

8. $x^2 - 15x + 56$

9. $z + z^2 - 72$

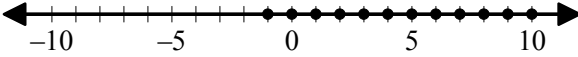
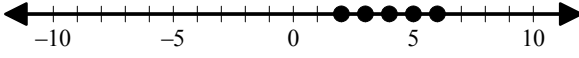
10. $x^2 + 3x - 10$

11. $x^2 + 9x + 14$

12. $-10f + f^2 + 21$

13. Simplify. Write the answer as a simple fraction with all exponents positive. $\frac{\frac{1}{2} + \frac{e}{f}}{\frac{e}{f}}$

14. Simplify. Write the answer as a simple fraction with all exponents positive. $\frac{s^{-1} + ts^{-2}}{s^{-1}t^3}$

15. Simplify. Write the answer as a simple fraction with all exponents positive. $\frac{1 - \frac{g}{h}}{\frac{1}{h} + h}$
16. Simplify. Write the answer as a simple fraction with all exponents positive. $\frac{u^{-3} + v^{-3}}{v^{-3}}$
17. Simplify: $7\sqrt{7} + 3\sqrt{7} - 3\sqrt{7}$
18. Regina's test scores were 92, 86, 68, and 73. What was her weighted average if the tests were weighted 3, 2, 2, and 4, respectively? Round your answer to the nearest whole number.
19. In the Olympics, the athlete received an 85% score on the compulsory exercises, which were weighted 70%. In the optional round, weighted 30%, the athlete received an 80%. What was the athlete's weighted average?
20. Simplify: $5\sqrt{2} + 7\sqrt{2} - 5\sqrt{2}$
21. Write an inequality whose solution is the graph shown below. Remember to designate the domain.
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22. Write a conjunction that describes this graph. Specify the domain.
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23. Graph the following inequality on a number line: $x - 2 \geq 1$; $D = \{\text{Positive integers}\}$
24. Simplify: $\sqrt{120}$
25. Indicate whether each of the following numbers is a rational or an irrational number.
 (a) π (b) -2 (c) $\frac{2}{3}$ (d) $3\sqrt{36}$

26. Indicate whether each of the following numbers is a rational or an irrational number.

(a) $6\sqrt{5}$ (b) $4 + \pi$ (c) $-\pi + 1 + \pi$ (d) $\sqrt{\frac{80}{5}}$