Wheaton High School Name_____

Precalculus Summer Packet

Date_____ Period____

Simplify each expression.

1) $\frac{29}{6}x + \frac{17}{10} + x + \frac{37}{8}$

2) $\frac{23}{4}v + 1 + \frac{5}{7}v$

3) $\frac{1}{2}\left(a + \frac{7}{6}\right)$

4) $-\frac{5}{7}\left(\frac{5}{7}n + \frac{11}{2}\right)$

5) $-\frac{32}{9}\left(k + \frac{1}{4}\right) - \frac{11}{3}$

6) $-2 - \frac{13}{8}\left(-\frac{5}{3}p + 1\right)$

7) $2\left(n - \frac{8}{5}\right) + \frac{41}{7}\left(-\frac{3}{4}n + \frac{9}{10}\right)$

8) $-2\left(x - \frac{53}{7}\right) - \frac{25}{8}\left(\frac{2}{5}x + \frac{24}{5}\right)$

Solve each equation.

9) $-8\left(\frac{7}{2}b + \frac{1}{2}\right) = \frac{254}{3}$

10) $\frac{9832}{105} = 8\left(-\frac{8}{3}r + \frac{11}{7}\right)$

11) $-(x + 5) + 5x = 4(x + 8)$

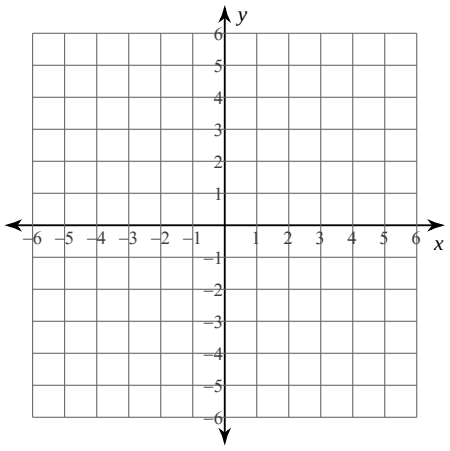
12) $-5(v + 2) - 4(1 + v) = -3v - 6v$

13) $-5(8 + 4n) = -6n + 3(-2n - 8)$

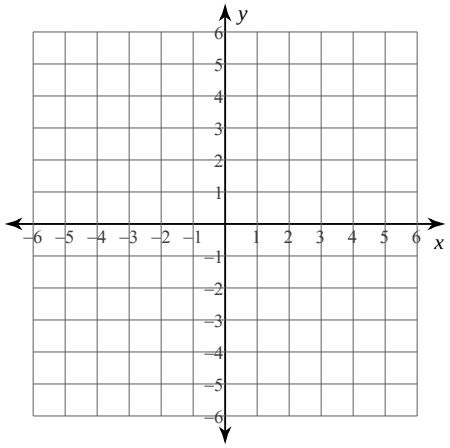
14) $2a + 5 + 6a = -4(1 - a) + 2(1 + 2a)$

Sketch the graph of each line.

15) $3x + y = 0$

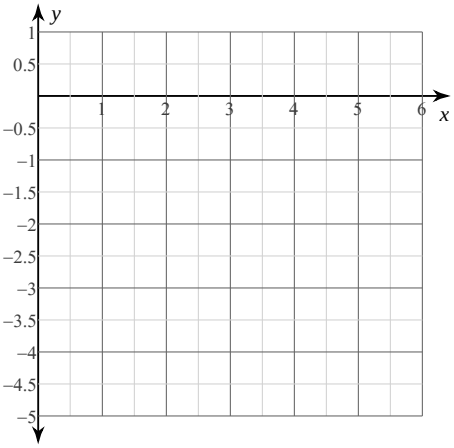


16) $y = \frac{5}{4}x + 3$

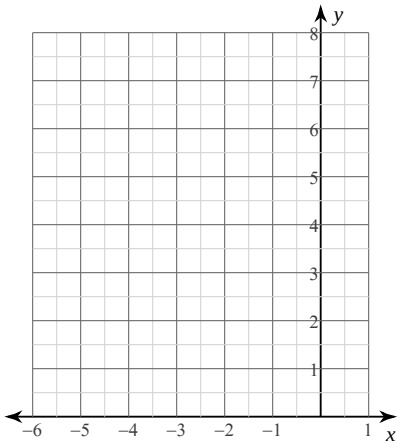


Sketch the graph of each function.

17) $y = -\frac{1}{3}x^2 + 2x - 5$



18) $y = (x + 4)^2 + 3$



Factor each completely.

19) $x^2 + 2x - 3$

20) $b^2 - 10b + 24$

21) $m^2 + 10m$

22) $x^2 - 11x + 24$

23) $3a^2 - 7a - 20$

24) $5x^3 - 3x^2 - 2x$

Find each product.

25) $(4b + 1)(8b - 2)$

26) $(6n - 6)(5n + 5)$

27) $(2v - 4)(2v^2 - 3v - 2)$

28) $(5x + 1)(x^2 + 5x + 6)$

29) $(a^2 + 4a + 8)(2a^2 + 5a + 1)$

30) $(8n^2 - 2n + 8)(2n^2 + 5n - 1)$

Find the inverse of each function.

31) $f(x) = -\frac{3}{x} - 1$

32) $g(x) = -\frac{1}{x - 1} - 3$

33) $f(x) = -x - 7$

34) $g(x) = \frac{7x + 22}{3}$

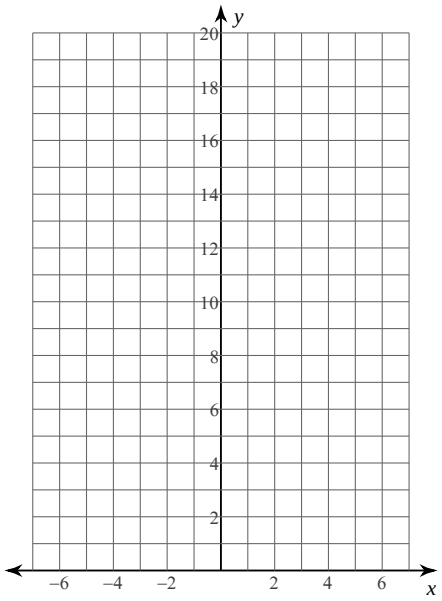
Identify the domain and range of each. Then sketch the graph.

35) $y = \sqrt{x}$

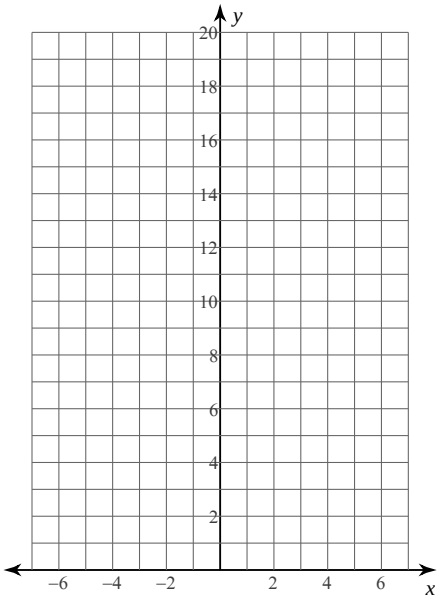
36) $y = \sqrt{x} + 1$

Sketch the graph of each function.

37) $y = 5 \cdot \left(\frac{1}{2}\right)^x$

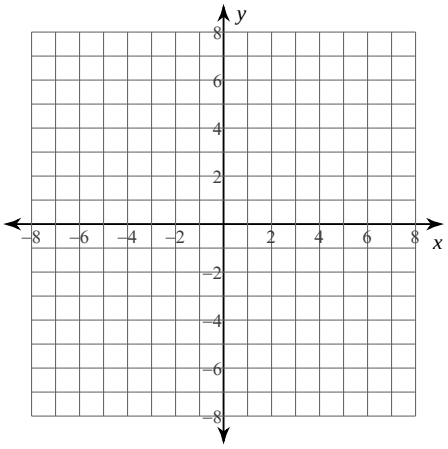


38) $y = 4 \cdot 2^x$



Identify the domain and range of each. Then sketch the graph.

39) $y = \log_6 (x + 1) - 5$



40) $y = \log_{\frac{1}{4}} (x - 1) - 5$