

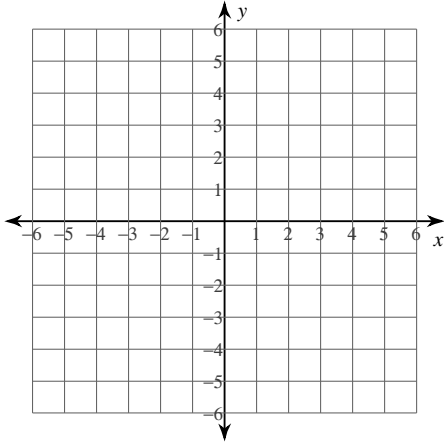
PreCalculus Summer Work

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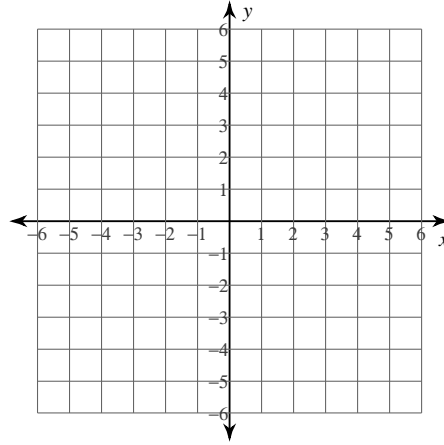
Sketch the graph of each line.

Name _____ Date _____ Period _____

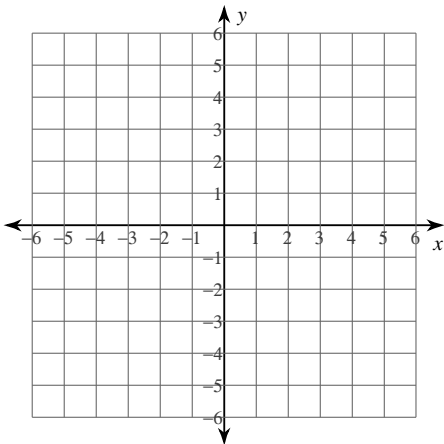
1) $-6x + 8y = 24$



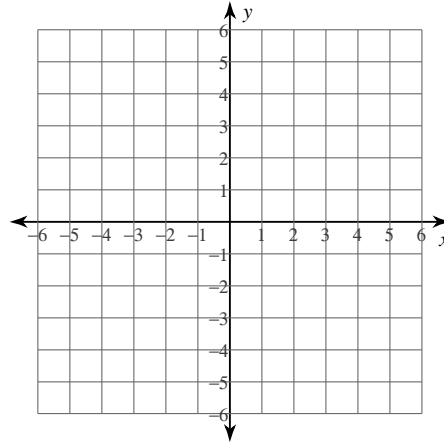
2) $-3y + 6 = -x$



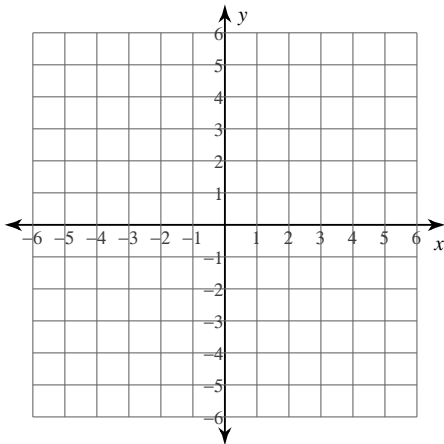
3) $0 = -y + 1 + \frac{2}{5}x$



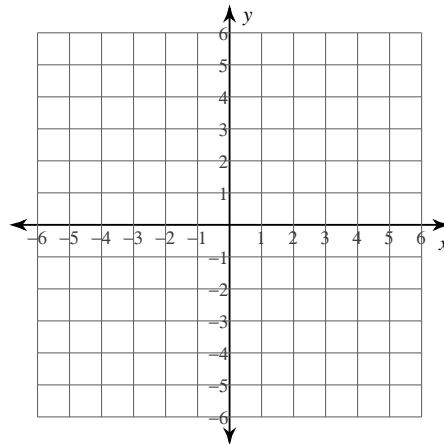
4) $3x + 4y + 8 = 0$



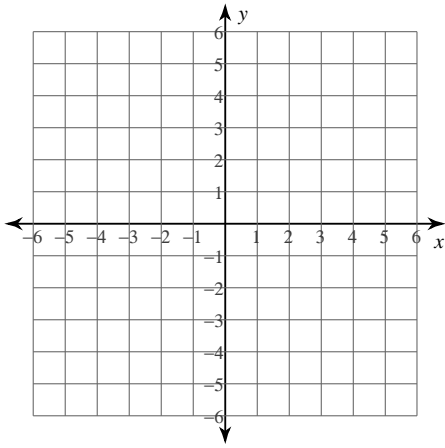
5) $15 + 3x = 3y$



6) $-2x - 5y = -10$

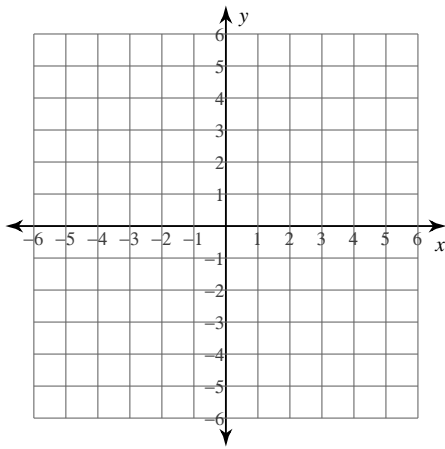


7) $-20 = -7x - 5y$

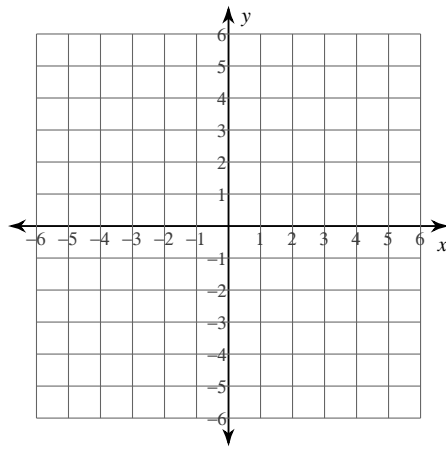


Sketch the graph of each linear inequality.

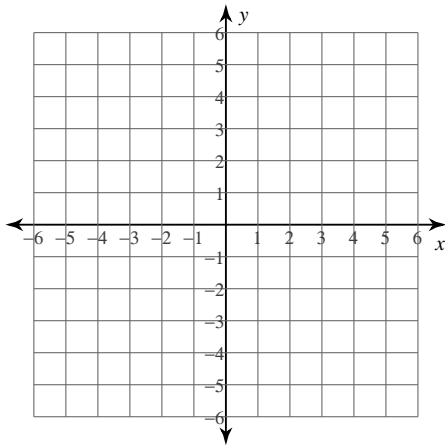
8) $3x + 5y \leq 15$



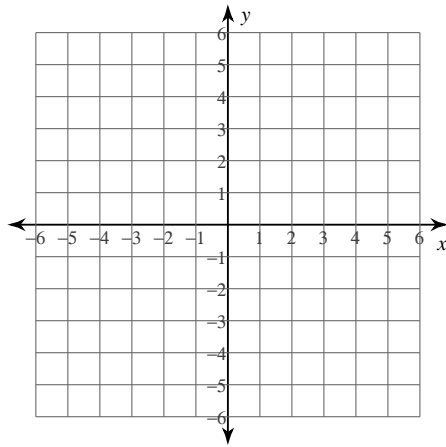
9) $x + 2y \leq 0$



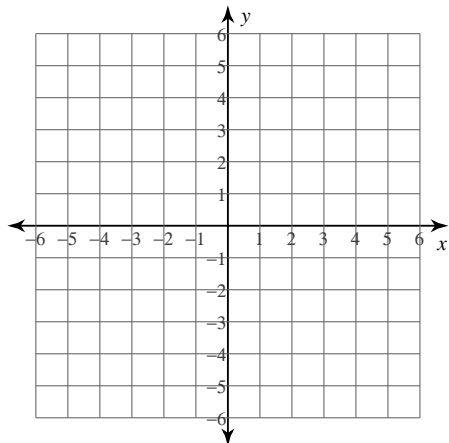
10) $4x + 3y < 0$



11) $x - y \geq -3$

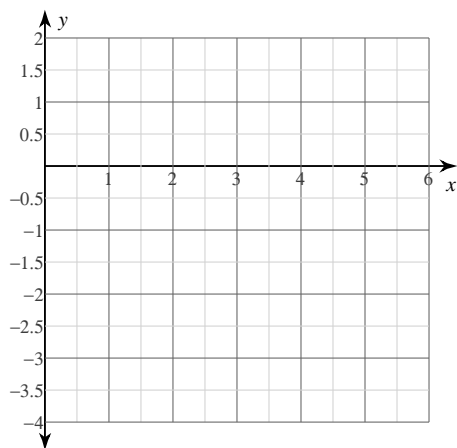


12) $x - y < 5$

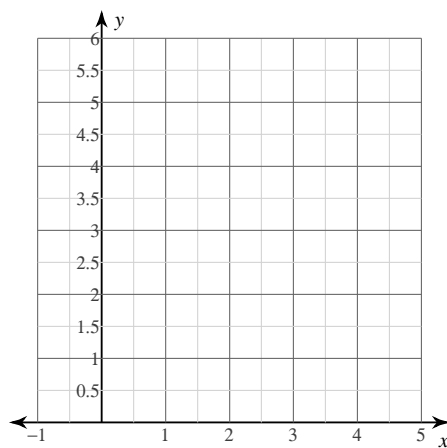


Sketch the graph of each function.

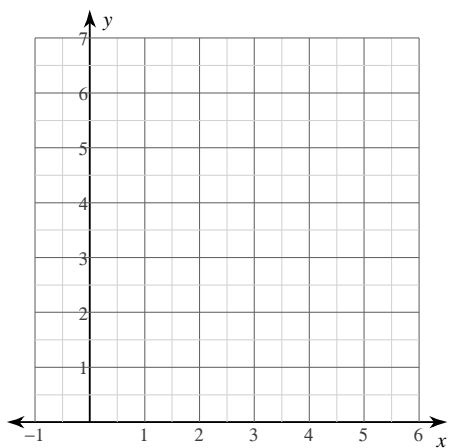
13) $y = x^2 - 6x + 6$



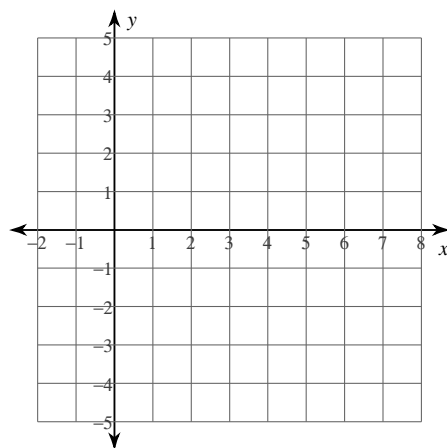
14) $y = x^2 - 4x + 5$



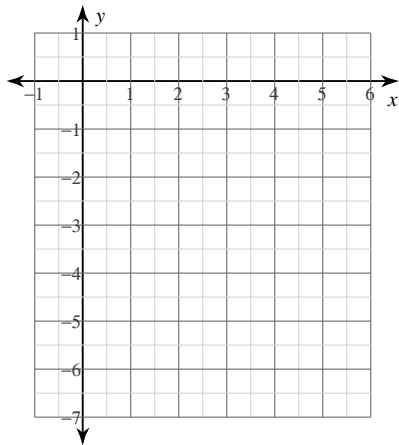
15) $y = x^2 - 8x + 18$



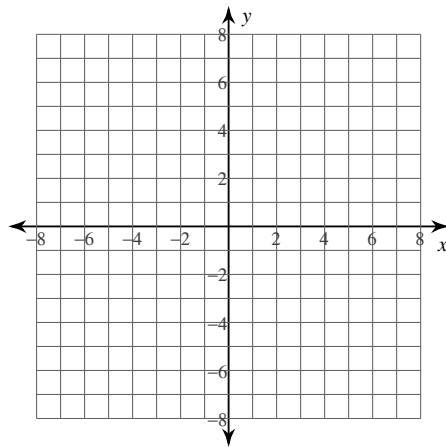
16) $y = 2x^2 - 4x - 2$



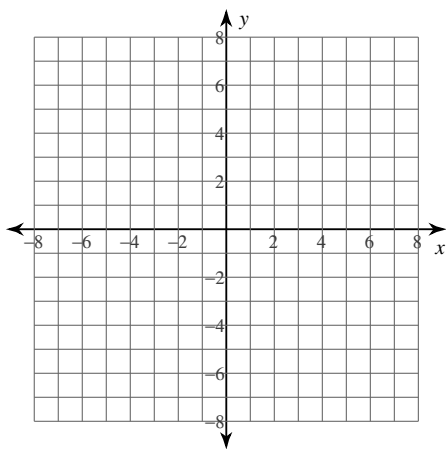
17) $y = -x^2 + 8x - 17$



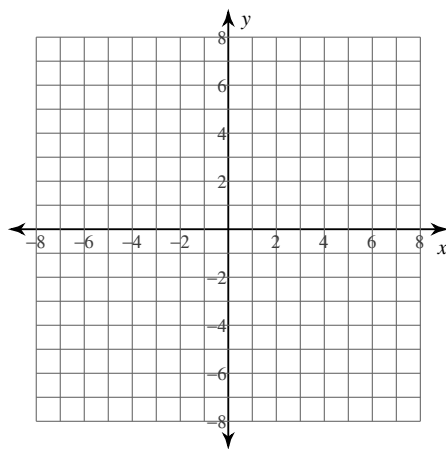
18) $y = \frac{2}{3}\sqrt{x}$



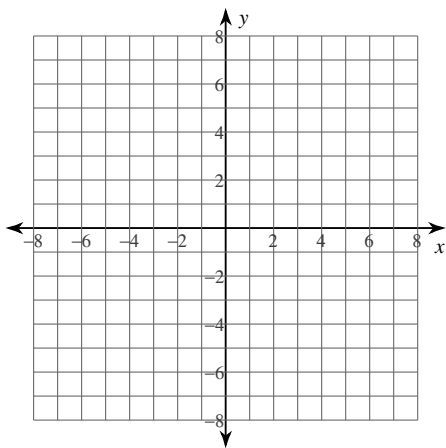
19) $y = \sqrt{x-2}$



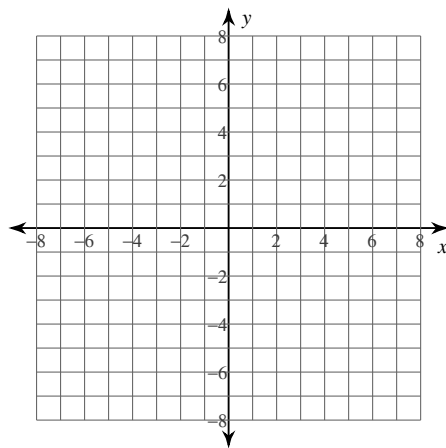
20) $y = 1 + \sqrt{x}$



21) $y = \sqrt{x} - 1$



22) $y = 2\sqrt{x-3}$



Simplify each and state the excluded values.

23) $\frac{x^3 - 10x^2 + 24x}{4x - 16}$

24) $\frac{x^3 - 18x^2 + 80x}{2x^2 - 20x + 32}$

25) $\frac{b^2 - 14b + 48}{b^3 - 2b^2 - 48b}$

26) $\frac{n^3 - 6n^2 + 9n}{2n^2 - 6n}$

$$27) \frac{m^2 - 9m + 14}{m^3 - 6m^2 - 7m}$$

Simplify each expression.

$$28) \frac{n-4}{6(n+1)} + \frac{n-1}{6(n+1)}$$

$$29) \frac{3r}{3(r+1)} + \frac{r-3}{3(r+1)}$$

$$30) \frac{4n}{6(n+4)} - \frac{5n}{6(n+4)}$$

$$31) \frac{6m+5}{3(m-2)(2m-5)} + \frac{m-6}{3(m-2)(2m-5)}$$

$$32) \frac{4b-4}{(b+4)(b-2)} - \frac{b+1}{(b+4)(b-2)}$$

$$33) \frac{6n}{9(n+2)} + \frac{6n}{3}$$

$$34) \frac{a+1}{12a(a+1)} + \frac{2}{3}$$

$$35) \frac{2}{3} - \frac{2}{3(p-2)}$$

$$36) \frac{5}{2n} - \frac{n+5}{6n(n-2)}$$

$$37) \frac{5}{m-3} - \frac{3}{4m^2}$$

$$38) \frac{x^2 + 14x + 40}{x-2} \div \frac{x^2 + 8x - 20}{x^2 - 4x + 4}$$

$$39) \frac{n^2 + 5n + 4}{n-8} \div \frac{8n + 32}{n^2 - 3n - 40}$$

$$40) \frac{40v^3 + 64v^2}{v^2 + 13v + 40} \cdot \frac{7v^3 + 56v^2}{40v^3 + 64v^2}$$

$$41) \frac{3n+27}{2n+18} \div \frac{3n+27}{2n+10}$$

$$42) \frac{b^2 + 19b + 90}{10} \div \frac{b^2 + 19b + 90}{10b + 80}$$

Simplify.

$$43) 3\sqrt{45} - 2\sqrt{5} - 2\sqrt{27}$$

$$44) -3\sqrt{45} - \sqrt{20} - 3\sqrt{27}$$

$$45) 3\sqrt{8} + 2\sqrt{27} - 2\sqrt{8}$$

$$46) -2\sqrt{6} - 3\sqrt{20} - 3\sqrt{6}$$

$$47) -2\sqrt{54} + 2\sqrt{5} + 2\sqrt{6}$$

$$48) -\sqrt{45} - 2\sqrt{8} - \sqrt{2}$$

$$49) (-4 + \sqrt{2})(-1 - 5\sqrt{2})$$

$$50) (\sqrt{5} + 3)(-3\sqrt{5} - 1)$$

$$51) (-3\sqrt{2} + \sqrt{3})(-4\sqrt{2} + 4\sqrt{3})$$

$$52) (4\sqrt{5} - 4)(\sqrt{5} - 1)$$

$$53) (\sqrt{2} - 2\sqrt{3})(\sqrt{2} + \sqrt{3})$$

$$54) (-5\sqrt{3} + \sqrt{2})(\sqrt{3} - 2\sqrt{2})$$

$$55) (\sqrt{2} + 5)(3\sqrt{2} - 1)$$

Factor each completely.

$$56) x^2 - 17x + 70$$

$$57) p^2 - 3p - 40$$

$$58) m^2 - 4m$$

$$59) x^4 + 10x^3$$

$$60) 3r^3 + 30r^2$$

$$61) 25m^2 + 90m - 175$$

$$62) 3x^2 + 10x$$

$$63) 7p^2 + 22p - 24$$

$$64) 7x^2 + 17x - 12$$

$$65) 9m^2 - 66m - 48$$

$$66) 25n^2 - 10n + 1$$

$$67) 25x^2 - 4$$

$$68) 9n^2 - 1$$

$$69) 25x^2 + 10x + 1$$

$$70) 4b^2 - 25$$

$$71) 375 + 3a^3$$

$$72) 27m^3 - 8$$

$$73) x^3 + 8$$

$$74) -64 - m^3$$

$$75) 375x^3 - 24$$

$$76) 35p^3 - 20p^2 + 21p - 12$$

$$77) 48x^3 + 18x^2 + 40x + 15$$

$$78) 2x^3 - 4x^2 + 7x - 14$$

$$79) 9v^3 + 15v^2 + 6v + 10$$

$$80) 4n^3 - 28n^2 + 3n - 21$$

Simplify. Your answer should contain only positive exponents.

$$81) \frac{(2ab)^3 \cdot 2a^4b^0}{a^3}$$

$$82) \frac{(x^4y^3)^4}{x^4 \cdot 2yx^3}$$

$$83) \frac{(a^4b^4 \cdot b^4)^0}{a^2b^0}$$

$$84) \frac{(2y^2 \cdot 2xy)^2}{2x^4y^2}$$

$$85) \frac{(2u^4v^0)^3 \cdot u^3}{2uv}$$