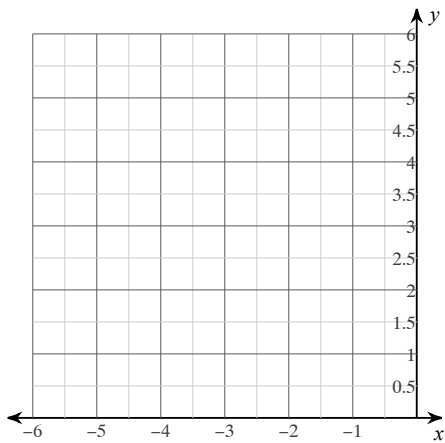


Summer Homework

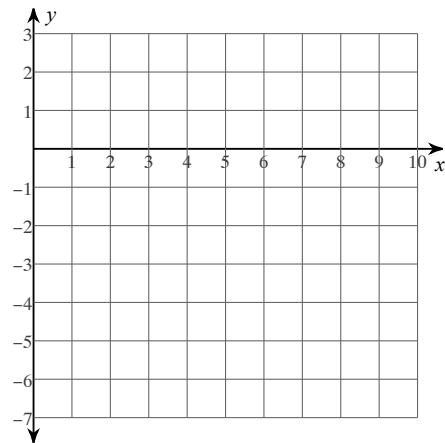
Date _____ Period _____

Sketch the graph of each function.

1) $y = x^2 + 4x + 5$

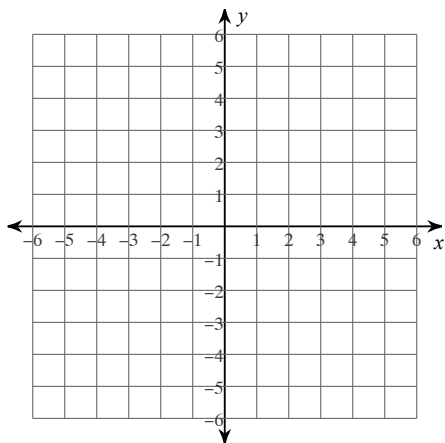


2) $y = -2x^2 + 12x - 16$

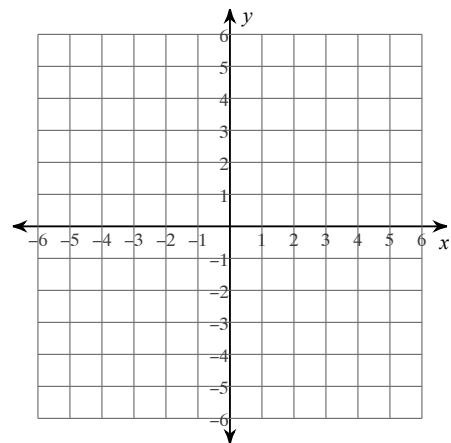


Graph each equation.

3) $y = |x - 4| + 4$



4) $y = |x + 3| - 1$



Simplify each expression.

5) $-3 - 4(r - 1)$

6) $-2(-8n + 2) + 2$

7) $p(7p + 5) - (-p - 3)$

8) $2(r + 5) - 6(r - 6)$

$$9) \frac{\frac{m^2}{2m+3}}{\frac{m^2}{2m+3} - \frac{m}{2}}$$

$$10) \frac{\frac{u^2}{3} - \frac{3}{2}}{3}$$

Solve each equation.

$$11) 2^{-3k} = \frac{1}{4}$$

$$12) \left(\frac{1}{4}\right)^{2-2r} = 32^{-3r}$$

Solve each equation. Round your answers to the nearest ten-thousandth.

$$13) -4 \cdot 11^{5v} = -54.6$$

$$14) 15^{1.6n} + 1 = 76$$

Solve each equation. Remember to check for extraneous solutions.

$$15) \frac{3}{x} = 1 - \frac{1}{x}$$

$$16) \frac{x+5}{6x} - \frac{1}{6x} = \frac{1}{x}$$

Simplify. Your answer should contain only positive exponents.

$$17) 4x^{-4} \cdot y$$

$$18) 2a^{-3}b^4 \cdot 4a^3$$

$$19) 4n^3 \cdot 4m^2n^2$$

$$20) 2x^2y^3 \cdot 3x^4y^4$$

$$21) 3x \cdot 3x^{-2}y^{-4}$$

$$22) 2x^{-4}y^4 \cdot 2y^{-1}$$

$$23) (u^{-1})^{-5} \cdot -u^2v^5 \cdot -u^{-2}$$

$$24) x^{-3}y^2 \cdot (-x^2y^4)^0$$

Factor each completely.

$$25) x^4 + x^2 - 56$$

$$26) 4x^4 + 12x^2 - 40$$

$$27) 6x^4 - 90x^2 + 300$$

$$28) x^4 + 7x^2 - 18$$

$$29) x^4 - 3x^2 - 70$$

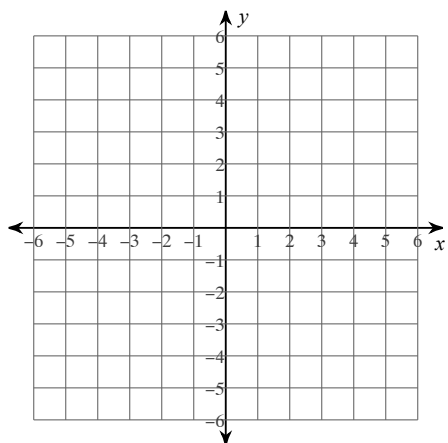
$$30) x^4 + 6x^2 - 27$$

$$31) a^4 - 5a^2 + 4$$

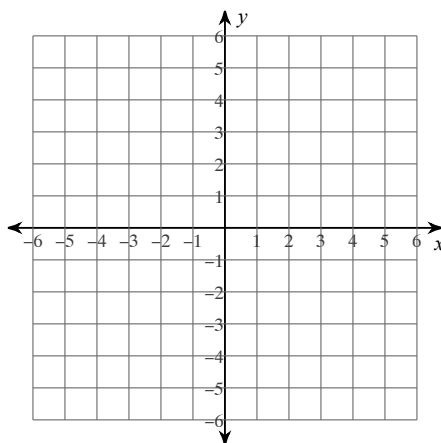
$$32) x^4 - 100$$

Sketch the graph of each line.

$$33) -6 = 2y - 3x$$



$$34) y + 4 = -x$$



Write the point-slope form of the equation of the line through the given point with the given slope.

$$35) \text{ through: } (-1, -5), \text{ slope} = \frac{7}{5}$$

$$36) \text{ through: } (-3, -4), \text{ slope} = 2$$

Evaluate each using the values given.

$$37) j\left(h - \left|\frac{k}{3}\right|\right); \text{ use } h = 2, j = -5, \text{ and } k = 9$$

$$38) -(|p| + r^2); \text{ use } p = 1, \text{ and } r = 8$$

$$39) z^2 - (x - 1 + 3); \text{ use } x = -3, \text{ and } z = 4$$

Simplify.

$$40) (a^5)^{\frac{3}{5}}$$

$$41) (1000a^9)^{\frac{4}{3}}$$

$$42) (81m^4)^{\frac{3}{2}}$$

$$43) (x^6)^{\frac{3}{2}}$$

$$44) (625n^4)^{\frac{1}{4}}$$

$$45) (k^2)^{\frac{1}{2}}$$

$$46) (81b^6)^{\frac{3}{2}}$$

$$47) (a^8)^{\frac{1}{2}}$$

Simplify. Your answer should contain only positive exponents with no fractional exponents in the denominator.

$$48) 2ba^{\frac{1}{2}} \cdot 2a^4$$

$$49) 4n^{-\frac{5}{4}} \cdot 4m^2n^2$$

$$50) x^{-1}y^{\frac{1}{2}} \cdot 4x^{\frac{3}{4}}y^{\frac{1}{2}}$$

$$51) 4uv^{-\frac{3}{2}} \cdot 4u^{-2}v^2$$

Simplify each expression.

$$52) \frac{4}{n-5} + \frac{n-6}{6}$$

$$53) \frac{5}{3n} - \frac{2}{3n+18}$$

$$54) \frac{1}{n-2} \cdot \frac{n^2+5n-14}{9n}$$

$$55) \frac{10n+40}{n-6} \cdot \frac{n-6}{n^2+7n+12}$$

Evaluate each function.

$$56) h(x) = 3x - 5; \text{ Find } h(3x)$$

$$57) h(x) = 4x + 4; \text{ Find } h(4x)$$

$$58) w(a) = 4a - 2; \text{ Find } w(2a)$$

$$59) h(x) = x + 2; \text{ Find } h(-2x)$$