

Solve and graph each of the following:

8) $2|3x-5|=15$

$x = 25/6$

$x = -5/6$

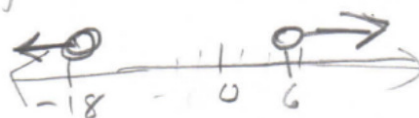
9) $|\frac{1}{2}x-3|>6$

$-\frac{1}{2}x-3>6$ OR $-\frac{1}{2}x-3<-6$

$2(-\frac{1}{2}x)>(9)^{-2}$ $2(-\frac{1}{2}x)<(-3)^{-2}$

$x<-18$ OR $x>6$

Flip when
dividing/multiplying
by a negative

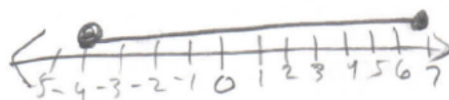


10) $|\frac{3}{4}x-1|\leq 4$

$\frac{3}{4}x-1\leq 4$ AND $\frac{3}{4}x-1\geq -4$

$\frac{4}{3}(\frac{3}{4}x)\leq(5)\frac{4}{3}$ $\frac{4}{3}(\frac{3}{4}x)\geq(-3)$

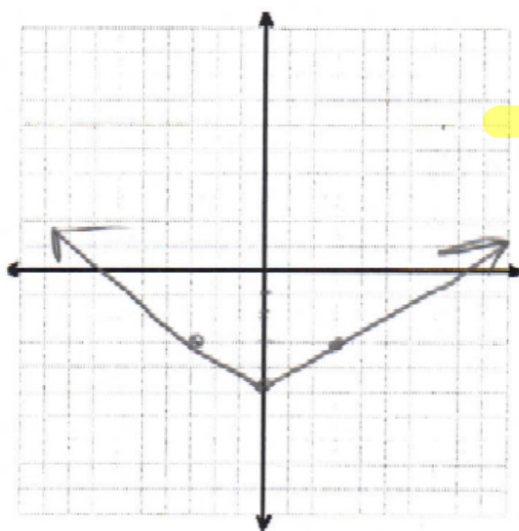
$x\leq\frac{20}{3}$ AND $x\geq-\frac{12}{3}$
 \downarrow $x\geq-4$
 $6\frac{2}{3}$



$-4 \leq x \leq 20/3$

Graph each of the following using a tables of values:

11) $y = \frac{2}{3}|x| - 5$



12) $y > -2|x+2| - 3$

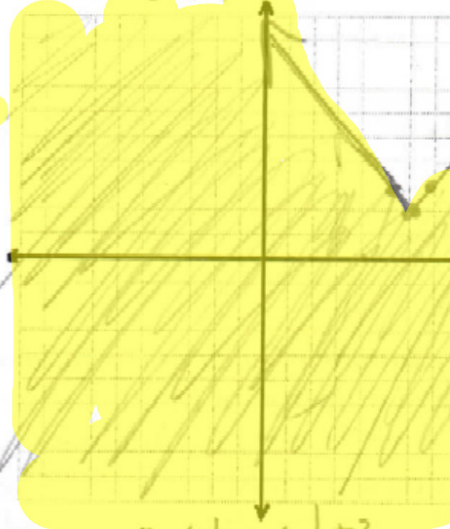
↑
dashed line



test (0,0)
 $0 > -2|0+2| - 3$
 $0 > -2|2| - 3$
 $0 > -2(2) - 3$
 $0 > -4 - 3$
 $0 > -7$ NOT TRUE

13) $y \leq |x-6| + 2$

↑
solid line



$0 \leq |0-6| + 2$
 $0 \leq |-6| + 2$
 $0 \leq 6 + 2$
 $0 \leq 8$ TRUE

$$(14) (-4)^2$$

$$(16)$$

$$(15) \sqrt{200}$$

$$\sqrt{100 \cdot 2}$$

$$10\sqrt{2}$$

$$(16) (8)^3$$

$$(2^3)^3$$

$$2^9$$

$$(4)$$

$$(17) (27)^{\frac{1}{3}}$$

$$(3^3)^{\frac{1}{3}}$$

$$3^{-1}$$

$$\left(\frac{1}{3}\right)$$

$$(18) \frac{\sqrt[5]{64}}{\sqrt[5]{32 \cdot 2}}$$

$$2\sqrt[5]{2}$$

$$(19) \frac{1}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{2}}{2}$$

$$(20) \frac{5-\sqrt{2}}{3+\sqrt{5}} \cdot \frac{3-\sqrt{5}}{3-\sqrt{5}}$$

$$\frac{15-5\sqrt{5}-3\sqrt{2}+\sqrt{10}}{9-5}$$

$$\frac{15-5\sqrt{5}-3\sqrt{2}+\sqrt{10}}{4}$$

$$(21) \frac{2}{3+i} \cdot \frac{3-i}{3-i}$$

$$\frac{6-2i}{9-i^2}$$

$$\frac{6-2i}{9+1}$$

$$\frac{6-2i}{10}$$

$$\frac{6}{10} - \frac{2i}{10}$$

$$\left(\frac{3}{5} - \frac{i}{5}\right)$$

$$(22) \frac{5}{2i} \cdot \frac{i}{i}$$

$$\frac{5i}{2i^2}$$

$$\left(\frac{5i}{-2}\right)$$

$$(23) (3-2i) + (4+5i)$$

$$7+3i$$

$$(24) (3+5i)(2-3i)$$

$$6-9i+10i-15i^2$$

$$6+i+15$$

$$21+i$$

$$\textcircled{25} \quad 5^{-3} \\ \frac{1}{5^3} \\ \frac{1}{125}$$

$$\textcircled{26} \quad (3x^2)^4 \\ 3^4 x^8 \\ 81x^8$$

$$\textcircled{27} \quad (2x^2y^3)^{-3} \\ 2^{-3} x^{-6} y^{-9} \\ \frac{1}{2^3 x^6 y^9}$$

$$\textcircled{28} \quad 4(x^3)^4 \\ 4x^{12}$$

$$\textcircled{29} \quad \frac{2x^{-3}y}{y^2} \\ \frac{2}{x^3y}$$

$$\textcircled{31} \quad -3x^{-2} \\ -\frac{3}{x^2}$$

$$\textcircled{32} \quad (-3x)^3 \\ -3^{-3} x^{-3} \\ \frac{1}{(-3)^3 x^3} \\ -\frac{1}{27x^3}$$

$$\textcircled{33} \quad (2x^2y)^0 \\ 1$$

$$\textcircled{34} \quad i^8 \\ 1 \quad \sqrt[4]{8} \quad \sqrt[2]{10}$$

$$\textcircled{35} \quad i^9 \\ -i \quad \sqrt[4]{91} \quad \sqrt[2]{13}$$

$$\textcircled{36} \quad (2x^3y^4)^2 (-3xy^3)^3 \\ (2^2 x^6 y^8) (-3^3 x^3 y^9) \\ (4x^6 y^8) (-27) \\ -108x^9 y^{17}$$

$$(37) \frac{(4x)}{2x^{-3}}$$

$$\frac{4^2 x^{-4}}{2 x^{-3}}$$

$$\frac{x^3}{4^2 \cdot 2x^4}$$

$$\frac{x^3}{32x^4}$$

$$\frac{1}{32x}$$

$$(38) \sqrt[3]{24x^3y^5}$$

$$\sqrt[3]{8 \cdot 3 \cdot x^3 \cdot y^3 y^2}$$

$$2xy \sqrt[3]{3y^2}$$

$$(39) \sqrt{32} - 2\sqrt{18}$$

$$\sqrt{16 \cdot 2} - 2\sqrt{9 \cdot 2}$$

$$4\sqrt{2} - 2 \cdot 3\sqrt{2}$$

$$4\sqrt{2} - 6\sqrt{2}$$

$$-2\sqrt{2}$$

$$(40) (\sqrt[3]{125})^{-2}$$

$$(5)^{-2}$$

$$\frac{1}{5^2}$$

$$\frac{1}{25}$$

$$(41) \sqrt{x^2}$$

$$x$$