

TH-A2 Algebra 2 Week 5

$$8(x-6) \geq 40$$

$$\begin{array}{r} 8x - 48 \geq 40 \\ +48 \quad +48 \end{array}$$

$$\frac{8x}{8} \geq \frac{88}{8}$$

$$x \geq 11$$



$$10 - x \geq 3(2 + x)$$

$$\begin{array}{r} 10 - x \geq 6 + 3x \\ +x \quad \quad +x \end{array}$$

$$\begin{array}{r} 10 \geq 6 + 4x \\ -6 \quad -6 \end{array}$$

$$\frac{4}{4} \geq \frac{4x}{4}$$

$$1 \geq x$$



$$\begin{array}{r} 8 < 2 - 4x \leq 18 \\ -2 \quad -2 \quad \quad -2 \end{array}$$

$$\begin{array}{r} 6 < -4x \leq 16 \\ -4 \quad -4 \quad -4 \end{array}$$

flip inequalities

$$-1.5 > x \geq -4$$

$$-1.5 > x \quad x \geq -4$$



$$3x - 5 \geq -13 \quad \text{"and"} \quad 2x - 3 \leq 1$$

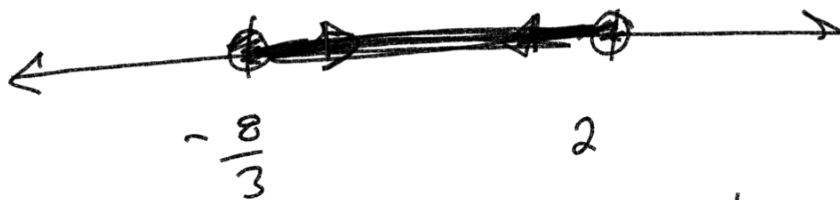
$$+5 \quad +5 \quad \downarrow \quad +3 \quad +3$$

$$\frac{3x}{3} \geq \frac{-8}{3} \quad \text{convergent} \quad \frac{2x}{2} \leq \frac{4}{2}$$

$$x \geq -\frac{8}{3} \quad \text{"or"} \quad x \leq 2$$

$$\downarrow$$

$$\text{divergent}$$



1-5 Absolute Value Equations & Inequalities

$$|3x + 8| = 17 \quad |17| = 17$$

$$|-17| = 17$$



$$3x + 8 = 17$$

$$-8 \quad -8$$

$$3x + 8 = -17$$

$$-8 \quad -8$$

$$\frac{3x}{3} = \frac{9}{3}$$

$$\frac{3x}{3} = \frac{-25}{3}$$

$$x = 3$$

$$x = \frac{-25}{3} = -8.\overline{3} \dots$$

$$|x+5| = 5x+6$$

cannot be negative
Check our work!

$$x+5 = 5x+6$$

$$-x \quad -x$$

$$5 = 4x+6$$

$$-6 \quad -6$$

$$-1 = 4x$$

$$\frac{-1}{4} = \frac{4x}{4}$$

$$x = \frac{-1}{4}$$

5x+6

Think

$$5\left(-\frac{1}{4}\right) + 6$$

$$-\frac{5}{4} + 6$$

$$-1.25 + 6$$

$$= 4.75$$

opposite

$$x+5 = -(5x+6)$$

$$x+5 = -5x-6$$

$$+5x \quad +5x$$

$$6x+5 = -6$$

$$-5 \quad -5$$

$$\frac{6x}{6} = \frac{-11}{6}$$

does not work

$$x = \frac{-11}{6}$$

$$5\left(-\frac{11}{6}\right) + 6$$

$$-\frac{55}{6} + 6$$

$$-9.1\bar{6} + 6$$

$$= -3.1\bar{6}$$

No!

$$|x+2| = -8$$

No solution ns

Absolute value must equal a positive!

$$\frac{-2|x+2|}{-2} = \frac{-8}{-2}$$

$$|x+2| = 4$$

Isolate the Abs value first!

$$|x+8| + 10 = 3$$

-10 -10

$$|x+8| = -7$$

no solution

$$|28| = 28 \quad | -28 | = 28 \quad \text{no } x$$

$$|x+3| = 28$$

$$x+3 = 28$$

-3 -3

$$x = 25$$

$$x+3 = -28$$

-3 -3

$$x = -31$$

no check

$$x = 2$$

check

$$7x - 13$$

$$x=2 \quad 7(2) - 13$$

$$14 - 13 = 1$$

Isolate the
Absolute Value

$$| \quad | = \underline{\quad}$$

$$|x-1| = 7x - 13$$

$$x-1 = 7x-13$$

$$x-1 = -(7x-13)$$

$$x-1 = 7x-13$$

-x -x

$$x-1 = -7x+13$$

+7x +7x

$$-1 = 6x - 13$$

+13 +13

$$8x - 1 = 13$$

+1 +1

$$\frac{12}{6} = \frac{6x}{6}$$

$$\frac{8x}{8} = \frac{14}{8}$$

$$x = \frac{14}{8}$$

$$x = \frac{7}{4}$$

$$7\left(\frac{7}{4}\right) - 13$$

$$\frac{49}{4} - 13$$

$$12.25 - 13$$

$$-0.75$$

$$|k-3| \leq 19$$

$$k-3 \leq 19$$

+3 +3

$$k \leq 22$$

$$k-3 \geq -19$$

+3 +3

$$k \geq -16$$



$$|x-3| \leq -8$$

no solution

$$|x-3| \geq -8$$

all solutions

\mathbb{R}

all real numbers

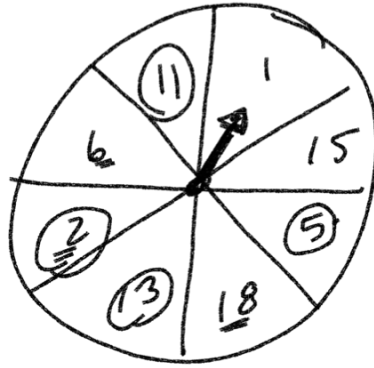
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1-6 Probability

$$P(\text{even}) = \frac{3}{8}$$

$$P(5) = \frac{1}{8}$$

$$P(\text{prime}) = \frac{4}{8} = \boxed{\frac{1}{2}}$$



$$\text{Probability} = \frac{\text{desired solutions}}{\text{total possible}}$$

$$P(\text{Snickers}) = \frac{8}{30} = \boxed{\frac{4}{15}}$$

Sour Patch Kids 6

$$P(\text{SPK or KK}) = \frac{6+4}{30} = \frac{10}{30}$$

Snickers 8

$$\boxed{\frac{1}{3}}$$

Kit Kats 4

$$P(\text{not Reese's}) = \frac{30-12}{30}$$

Reese's 12

$$\frac{18}{30} = \boxed{\frac{3}{5}}$$

Total 30



$$P(\text{SPK and then Snickers})$$

if you replace

$$\frac{6}{30} = \frac{1}{5}$$

$$\frac{8}{30} = \frac{4}{15}$$

$$\frac{1}{5} * \frac{4}{15} = \boxed{\frac{4}{75}}$$

$$P(\text{Reese's and then Reese's})$$

if you replace

$$\frac{12}{30} = \frac{2}{5}$$

$$\frac{2}{5}$$

$$\frac{2}{5} * \frac{2}{5} = \boxed{\frac{4}{25}}$$

$P(\text{kk and then Reese's})$
without replacing

$$P(\text{kk}) = \frac{4}{30} = \frac{2}{15} \quad \frac{12}{29}$$

$$\frac{2}{15} \xrightarrow{2} \frac{12}{29} \xrightarrow{3}$$

$$\frac{2}{5} * \frac{4}{29} = \boxed{\frac{8}{145}}$$

$\{1, 2, 3, 4, 5\}$

$$P(2) = \frac{1}{5}$$

$$P(\text{even}) = \frac{2}{5}$$

$$P(\text{prime}) = \frac{3}{5}$$

$$P(\text{number is less than 5}) = \frac{4}{5}$$

Sour Patch Kids	6
Snickers	8
Kit Kats	4
Reese's	12
Total	30

Quiz 3
due tonight!

Quiz 4
due Oct 1st

Ch 1 Test
Oct 1st
due Oct 8th

HW

1.5 evens
1.6 evens

+ Review Qs

Online HW 5 (Sat)
Oct 8th

Ch 1 Quiz due
Pre-Test

