ثانويـة التكنولوجيـا التطبيقيـة
Applied Technology High School

Math

Grade 10- H.O.T problems Chapter 1 {Lessons 1,2,3,4,5 and 6}

Name: ……	Grade:10
Duration: (1 hour - 60 min)	Section: ……

Lesson 1-1 Expressions and Formulas
H.O.T problems

Q1:- **FIND THE ERROR** Lauren and Rico are evaluating $\frac{-3d-4c}{2ab}$ for $a=-2$, $b=-3$, $c=5$, and $d=4$. Is either of them correct? Explain your reasoning.

Lauren

$$\frac{-3d-4c}{2ab}=\frac{-3(4)-4(5)}{2(-2)(-3)}$$

$$=\frac{-12-20}{12}=\frac{-32}{12}=-\frac{8}{3}$$

Rico

$$\frac{-3d-4c}{2ab}=\frac{-3(4)-4(5)}{2(-2)(-3)}$$

$$=\frac{-12-20}{12}=\frac{8}{12}=\frac{2}{3}$$

Q2:- **CHALLENGE** Let m, n, p, and q represent nonzero positive integers. Find a number in terms of m, n, p, and q that is halfway between $\frac{m}{n}$ and $\frac{p}{q}$.

The end of Sec. 1.1

H.O.T problems

Q1:- WHICH ONE DOESN'T BELONG? Identify the number that does not belong with the other three. Explain your reasoning.

$\sqrt{21}$	$\sqrt{35}$	$\sqrt{67}$	$\sqrt{81}$

Q2:- FIND THE ERROR Luna and Sophia are simplifying $4(14a - 10b) - 6(b + 4a)$. Is either of them correct? Explain your reasoning.

Luna

$4(14a - 10b) - 6(b + 4a)$

$56a - 40b - 6b + 24a$

$80a - 46b$

Sophia

$4(14a - 10b) - 6(b + 4a)$

$56a - 40b - 6a - 24b$

$50a - 64b$

Q3:- REASONING Determine whether the following statement is *sometimes*, *always*, or *never* true. Explain your reasoning.

An irrational number is a real number within a radical sign.

The end of Sec. 1.2

Q1:- **FIND THE ERROR** Steven and Jade are solving $A = \frac{1}{2}h(b_1 + b_2)$ for b_2. Is either of them correct? Explain your reasoning.

Steven

$$A = \frac{1}{2}h(b_1 + b_2)$$

$$\frac{2A}{h} = (b_1 + b_2)$$

$$\frac{2A - b_1}{h} = b_2$$

Jade

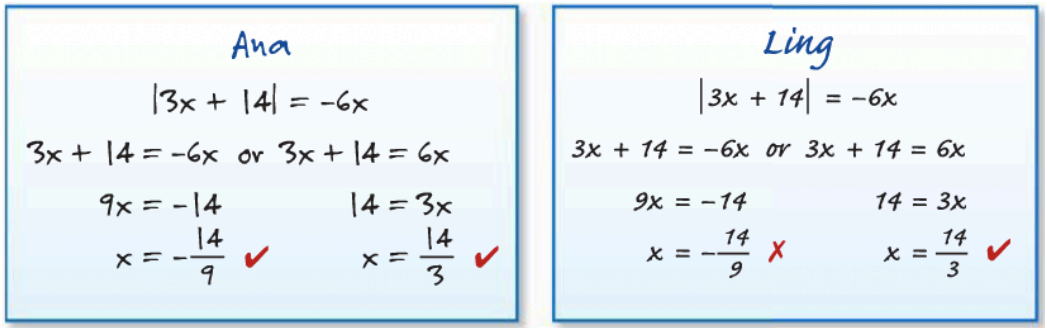
$$A = \frac{1}{2}h(b_1 + b_2)$$

$$\frac{2A}{h} = (b_1 + b_2)$$

$$\frac{2A}{h} - b_1 = b_2$$

The end of Sec. 1.3

Q1:- FIND THE ERROR Ana and Ling are solving $|3x + 14| = -6x$. Is either of them correct? Explain your reasoning.

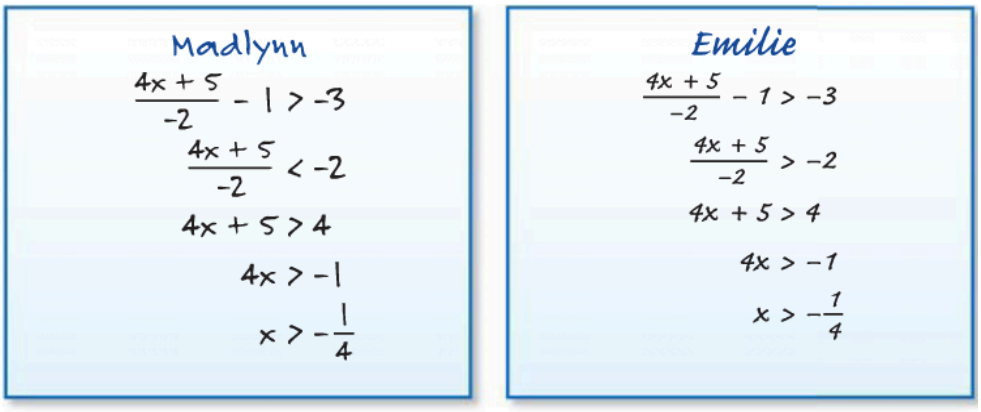


The end of Sec. 1.4

Lesson 1-5 Solving Inequalities

H.O.T problems

Q1:- **FIND THE ERROR** Madlynn and Emilie were comparing their homework. Is either of them correct? Explain your reasoning.



Q2:- **WRITING IN MATH** Why does the inequality symbol need to be reversed when multiplying or dividing by a negative number?

The end of Sec. 1.5

Q1:- FIND THE ERROR David and Sarah are solving $4|-5x-3|-6 \geq 34$. Is either of them correct? Explain your reasoning.

David

$4|-5x-3|-6 \geq 34$

$|-5x-3| \geq 10$

$-5x-3 \geq 10$ or $-5x-3 \leq -10$

$-5x \geq 13$ $\qquad$ $-5x \leq -7$

$x \leq -\frac{13}{5}$ $\qquad$ $x \geq \frac{7}{5}$

Sarah

$4|-5x-3|-6 \geq 34$

$|-5x-3| \geq 10$

$-5x-3 \leq 10$ or $-5x-3 \geq -10$

$-5x \leq 13$ $\qquad$ $-5x \geq -7$

$x \geq -\frac{13}{5}$ $\qquad$ $x \leq \frac{7}{5}$

Q2:- REASONING **Determine whether each statement is *true* or *false*. If false, provide a counterexample.**

The graph of a compound inequality involving an *and* statement is bounded on the left and right by two values of x.

Q3:- WHICH ONE DOESN'T BELONG? Identify the compound inequality that is not the same as the other three. Explain your reasoning.

$-3 < x < 5$	$x > 2$ and $x < 3$	$x > 5$ and $x < 1$	$x > -4$ and $x > -2$

Q4:- WRITING IN MATH Summarize the difference between *and* compound inequalities and *or* compound inequalities.

The end of Sec. 1.6