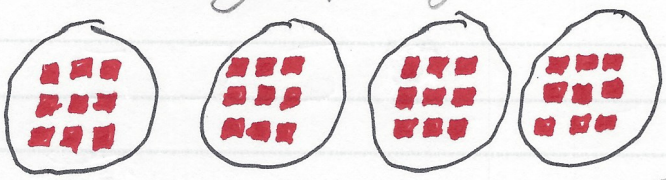
Unit 2
Solutions to Mid-Unit Review

Math 8

1.

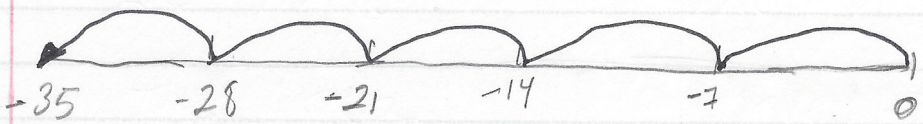
a) $(-9) \times (+4)$

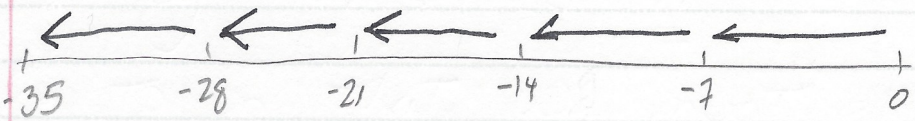
- FOUR groups of (-9)



→ 36 ■ → $(-9)\times(+4) =$ -36

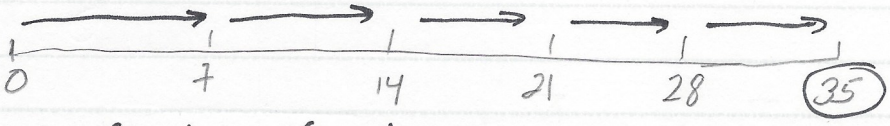
b) $(-7) \times (-5)$ → 5 groups of -7





- Since it's groups of -7, the arrow goes to the left.

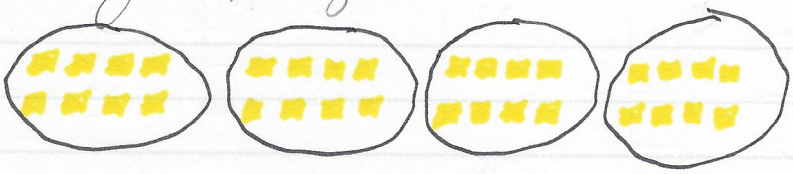
But since we have a (-5), we REVERSE THE DIRECTION OF ARROW



- $(-7)\times(-5) = 35$

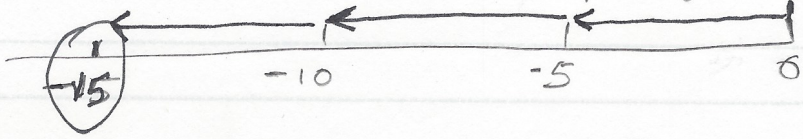
c) $(+4) \times (+8)$

4 groups of 8



→ 32 ■ ∴ $(4)\times(8) = 32$

D) $(+3) \times (-5)$ → 3 groups of -5 (ARROW to the left)



$(+3)\times(-5) = -15$

(2.) Retreats → 2 m per day → -2m per day
- Retreating means (negative).
- Since it retreated for 7 days:

$$\underbrace{(+7)}_{\text{days}} \times \underbrace{(-2\,m)}_{\text{Retreat}} = -14\,m$$

(3.) Temp. Rose ↑ 4° each hour for 5 hours.

$$\text{Total Change} = (+4) \times \underbrace{(5)}_{\text{hours}} = 20$$

↳ Because temp. increases each hour

∴ So, the total change in Temp. is +20°, or an increase of 20 degrees.

(4) a) (-8) × (+5) → Since this is 5 groups of -8 (negative), the product is negative.

b) (-5) × (-3) → a (-) × (-) = (+)

c) (+12) × (-4) → 12 groups of -4 gives a negative product

d) (+8) × (+9) → 8 groups of +9 Results in (+) (positive)

(5) a) (-8) × (+5) = -40
b) (-5) × (-3) = +15
c) (+12)(-4) = -48
d) (+8) × (+9) = +72

⑥ a) $(-20)(+14) = -280$

$(-2) \times \underbrace{(10) \times (14)}$

$-2 \times (140) = (-2) \times (14) \times (10)$

$= -28 \times 10 = -280$

b) $(-19)(-24) = 456$

$\underbrace{(-19) \times (2)} \times (-12)$

$\underbrace{(-38) \times (-2)}(6)$

$76 \times 6 = 456$

c) $(+40)(+27) = 1080$

$(+4)(10) \times (3) \times (9) = 90 \times 12$

$= \underbrace{90 \times (2} \times 6)$

$180 \times 6 = 1080$

d) $(+13)(-31) = -403$

	- 30	1	
	- 300	-10	10
	- 90	-3	3

$= -300 + (-90) = -390$

$-390 + (-10) = -400$

$-400 + (-3) = -403$

⑦ Drains → implicates negative

$(-35\ L) \times min$

$(-35) \times (30\ min)$

∴ 1050 L are drained in 30 min

	- 30	- 5	
	- 300	- 50	10
	- 300	- 50	10
	- 300	- 50	10

$-900 + -150 = -1050$

⑧ a) $(+4) \times \square = -32$ $\square = -8$

↳ (−)

↳ (8)

b) $\square \times (-6) = +54$ $\square = -9$

↳ (−)

↳ (9)

c) $(-8) \times \square = -56$ $\square = +7$

↳ (+)

↳ 7

d) $\square \times (-1) = 12$ $\square = -12$

↳ (−)

↳ (12)

⑨ a) $(+27) \div (+3) = +9$

$(+9) \times (+3) = +27$

$(+3) \times (+9) = +27$

b) $(+14) \div (-7) = (-2)$

$(-2) \times (-7) = +14$

$(-7) \times (-2) = +14$

c) $(-21) \div (-3) = +7$

$(-3) \times (+7) = -21$

$(+7) \times (-3) = -21$

d) $(-26) \div (+2) = (-13)$

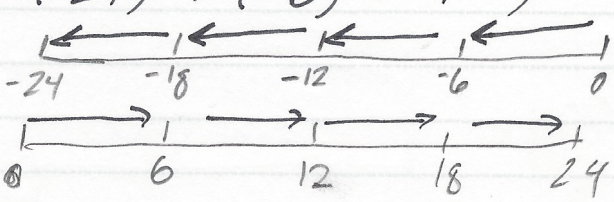
$(+2) \times (-13) = -26$

$(-13) \times (+2) = -26$

⑩ a) $(+20) \div (+4)$ → 20 yellow tiles grouped in 4s.

so $(+20) \div (+4) = (+5)$

b) $(-24) \div (-6) = (+4)$

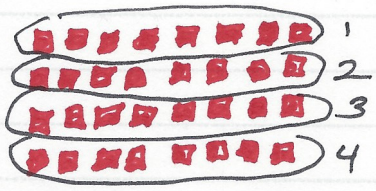


But because of the (−6), we do the opposite

4 groups

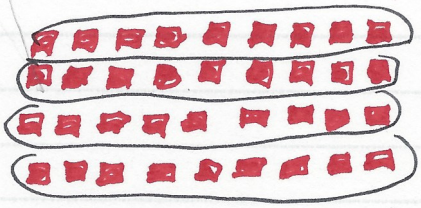
c) $(+32) \div (-8) = (-4)$

Bring 32 ■ to make zero pairs
32 ■ left over



$\rightarrow (-4)$

d) $(-36) \div (+4) \rightarrow -36$ into 4 groups



-9 on each group

$\therefore (-36) \div (+4) = (-9)$

(11) - -5 cm each hour (Drops are negative)

- total drop $= -30$ cm

- $\dfrac{-30 \text{ cm}}{-5 \text{ cm/hour}} = \underbrace{6 \text{ hours}}$

(12) $(-18) \div (+3)$

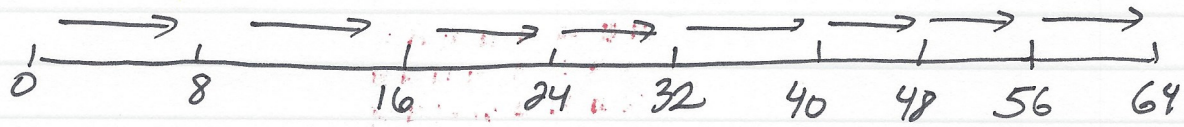
- Lana spent \$18 on video games at the arcade. This was done over a period of 3 hours. How much did she spend per hour?

  ↳ (spent) $= -18\$ / 3$ hours $= -6$ \$/hour

$\therefore$ she $\underbrace{\text{spent \$6 per hour}}$

(13) $(+64) \div (-8) = 8$ groups $= 8$

- Since we are dealing with a (-8), we use an arrow that faces the opposite way



- 8 arrows means $(+64) \div (-8) = 8$