

Week in Review # 6

MATH 365

3.4 - 4.1

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Created and compiled by Sherry Scarborough with thanks for additional problems from Zach Barcevac, Lynnette Cardenas, Greg Klein, David Manuel, Jane Schielack, and Jenn Whitfield.

1. A family goes to MegaBurger and orders 3 Kids' meals at \$2.49 (249 cents), 1 MegaMeal at \$4.29, 1 RegalBurger at \$1.59, and 1 drink at \$1.39. Estimate how much change the family will receive from a 20-dollar bill.

2. Model $-5 + 8$

3. What is the additive inverse of $-4x + 5z^2$? Simplify and justify your steps.

4. Use mental math to compute the following and explain what you are doing.

a. $76 - 59$

b. $36 + 83$

c. $490 \div 5$

d. $2 \cdot 28 \cdot 50$

e. $297 \div 11$

f. $83 \cdot 9$

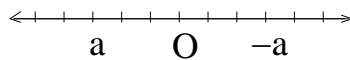
g. $40 \cdot 25$

h. $7264 \div 8$

5. Model 3 – 5

6. Find all integers x such that $-|x + 2| = -6$

7. A student had the following picture of an integer and its additive inverse. Other students objected saying that $-a$ should be to the left of zero. How do you respond?



8. Is the following an example of equal addends math for subtraction? If so, explain how it works. If not, correct it.

$$\begin{array}{r} \overset{\cdot}{40} \\ -11 \\ \hline \end{array} \quad \begin{array}{r} (40 + 1) \\ - (40 - 1) \\ \hline \end{array} \quad = \quad \begin{array}{r} 41 \\ -10 \\ \hline 31 \end{array} .$$

9. By the definition of integer subtraction, for integers w and t , $w-t$ is the unique integer m such that what?

10. Solve $|-x| = x$.

11. Model $4 +^{-} 7$

12. A standard Honda Accord costs \$19,340 plus a destination charge of \$415. You decide to add the following features:

Full Nose Mask	\$119
Fog Lights	\$269
Rear Wind Spoiler	\$499
Chrome Wheels	\$1116
Remote Entry	\$299
Security System	\$399
CD Changer	\$458

You agree that your rich uncle will buy the car with cash and you will pay him back over the next year. Estimate how much you would pay him each month. Remember that you must show all adjusted numbers in your estimation, and that everything should be doable in your head. Name or describe any techniques you use in your estimation.

13. Estimate the following and explain how you arrived at your estimate.

a. $660 \div 18$

b. $9375 - 5364$

c. $356 + 776 + 472 + 843$

d. $73 \cdot 84$

e. $151 + 145 + 154 + 148 + 156 + 149$

14. The average temperature in Barrow, Alaska ranges from a low of 24° F below zero in February to a high of 46° F above zero in July. How much does the average temperature change during the year from February to July? Write an expression that describes this problem (before any simplification) and then simplify it to find the answer.

15. A portable CD player costs \$39, headphones are \$16, and CDs are \$12. What is the cost of 1 CD player, two sets of headphones, and 5 CDs?
- Write an expression (before any simplification) that describes this problem.
 - Use mental math to compute. Show all your mental steps.

16. A shirt costs \$42, a pair of pants costs \$68, and a jacket costs \$84. Ignoring tax, estimate the cost of three shirts, two pair of pants, and one jacket.

17. Model $^{-6} - ^{-} 4$.

18. Justify each step.

$$38 - 21 = (3 \cdot 10 + 8 \cdot 1) - (2 \cdot 10 + 1 \cdot 1)$$

$$= (3 \cdot 10 + 8 \cdot 1) + ^- (2 \cdot 10 + 1 \cdot 1)$$

$$= (3 \cdot 10 + 8 \cdot 1) + (^- 2 \cdot 10 + ^- 1 \cdot 1)$$

$$= (3 \cdot 10 + ^- 2 \cdot 10) + (8 \cdot 1 + ^- 1 \cdot 1)$$

$$= (3 + ^- 2) \cdot 10 + (8 + ^- 1) \cdot 1$$

$$= 1 \cdot 10 + 7 \cdot 1$$

$$= 17$$