Math 7 Unit 1 worksheet: Subtracting integers

Name _____ Date _____ Period _____

1. Find each difference. Write each subtraction as an addition first.

(a) $-6 - 14$ (b) $17 - (-9)$ (c) $5 - 18$ (d) $-23 - (-31)$ (e) $-40 - (-12)$

(f) $72 - (-48)$

2. Fill in each blank with an integer to make the statement true.

(a) $5 - \square = 12$ (b) $\square - 9 = -4$ (c) $-3 - \square = -10$

(d) $\square - (-8) = 3$ (e) $-11 - \square = 4$ (f) $\square - 14 = -14$

3. Simplify. Rewrite every subtraction as an addition, then add.

(a) $12 - (-4) - 20 - 7$ (b) $-9 + 15 - (-3) - 25$ (c) $-30 - (-30) - 8 - (-1)$

4. Two students rewrote a subtraction as an addition and made a mistake. Find each mistake and give the correct difference.

(a) Isaac wrote $-6 - 9 = 6 + (-9) = -3$.

(b) Yuna wrote $4 - (-7) = 4 + (-7) = -3$.

5. Let $p = -8$, $q = 7$ and $r = -8$.

(a) Evaluate $(p - q) - r$.

(b) Evaluate $p - (q - r)$.

(c) Does the way a subtraction is grouped change its value? Use (a) and (b) to answer, and say what this means for working out a string of subtractions.

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6. Daniel says that when you subtract one negative integer from another, the answer is always negative.

(a) Find $-2 - (-9)$.

(b) Is Daniel right? Explain when the difference $a - b$ of two negative integers is positive, when it is negative and when it is zero.

7. Latitude tells how far north or south of the equator a place is, in degrees. Take latitudes north of the equator as positive and latitudes south of it as negative. To the nearest degree, Oslo, Norway lies at 60° and Wellington, New Zealand lies at −41°.

(a) Write a subtraction for how many degrees farther north Oslo, Norway lies than Wellington, New Zealand, and find it.

(b) Find the latitude of Wellington, New Zealand minus the latitude of Oslo, Norway. What does the sign of this answer tell you?

8. A balloon starts with no overall electric charge: it has as many protons, each with charge + 1, as electrons, each with charge −1, so its charge is 0. Rubbing it on a wool sweater moves 9 electrons onto the balloon. Later a metal doorknob takes 5 of those electrons away.

(a) What is the balloon's charge after the rubbing?

(b) Write a subtraction for the balloon's charge after the doorknob, and find it.

(c) Explain why taking electrons away made the charge go up.

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