

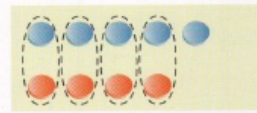
Solutions

Nov 20-18:35

1. During the field hockey season, Andre was on the field when his team scored 15 goals. While he was on the field, the opposing team scored 17 goals. Explain how you would figure out Andre's plus/minus rating.

2. Explain how the zero principle was used to find this sum.

$$-5 + 4 = -1$$

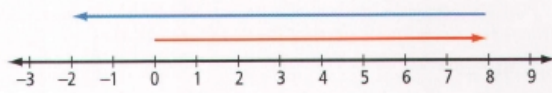


1. Scoring goals \rightarrow positive
 Conceding goals \rightarrow negative
 Add the two numbers $\rightarrow +15 + (-17)$
2. Match up a chip of each colour. These total zero and can be removed. The remaining chip is the answer.

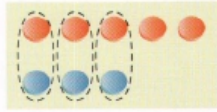
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3. Explain how the number line models this sum.

$$8 + (-10) = -2$$



4. What sum is modelled here? Explain how you know.

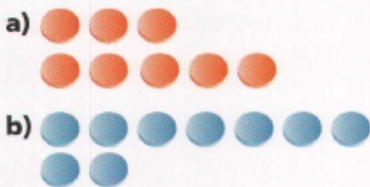


4. Start at zero and then move 8 to the right. Then move 10 to the left. You end up at -2.

5. $+5 + (-3) = +2$
Use the zero principle.

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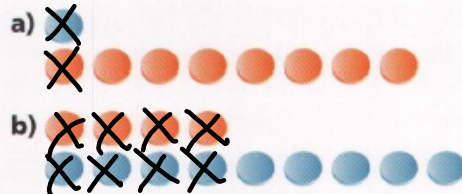
5. What integer sum is shown? Give each result.



a) $+3 + (+5) = +8$

b) $-7 + (-2) = -9$

6. Find the sum represented by the integer chips.



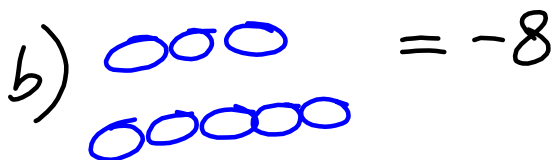
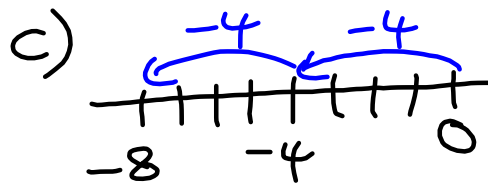
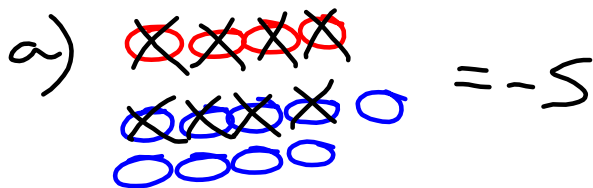
a) $-1 + (+8) = +7$

b) $+4 + (-9) = -5$

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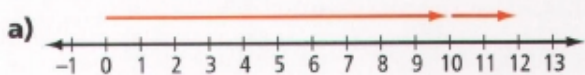
7. Use integer chips or a number line to model each sum.

- a) $4 + (-9)$ b) $-3 + (-5)$
 c) $-4 + (-4)$ d) $2 + (-3)$



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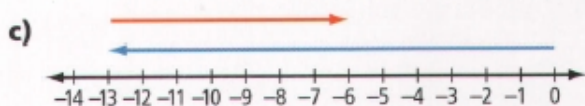
8. What integer sum is shown? Give each result.



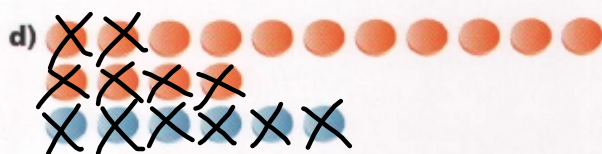
$+10 + (+2) = +12$



$-5 + (-8) = -13$



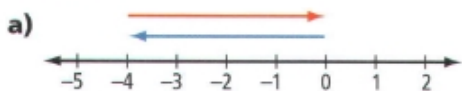
$-13 + (+7) = -6$



$+15 + (-6) = +9$

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9. What integer sum is shown? What do you notice about the results? Explain why this happens.



$$-4 + (+4) = 0$$



$$-5 + (+5) = 0$$

Opposite integers always add to make zero.

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10. Decide whether each sum is positive, negative, or zero. Do not evaluate.

a) $6 + (-6)$

b) $7 + 19$

c) $-4 + (-25)$

d) $-7 + 4$

e) $-10 + 15$

f) $123 + (-789)$

a) Zero

b) Positive

c) Negative

d) Negative

e) Positive

f) Negative

a) $4 + 10$

b) $3 + (-9)$

c) $-3 + (-6)$

d) $-2 + (-7)$

e) $7 + (-4)$

f) $-5 + (-3)$

a) +14

b) -6

c) -9

d) -9

e) +3

f) -8

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12. Find the plus/minus rating for the captains of the boys' and girls' hockey teams.

Player	Goals For	Goals Against
Surjeet	7	8
Elizabeth	8	6

$$\text{Surjeet } +7 + (-8) = -1$$

$$\text{Elizabeth } +8 + (-6) = +2$$

13. Calculate each sum.

a) $11 + 4$

b) $-20 + 15$

c) $25 + (-65)$

d) $-41 + (-52)$

e) $73 + (-83)$

f) $-50 + 24$

a) $+15$

b) -5

c) -40

d) -93

e) -10

f) -26

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14. Calculate each sum.

a) $6 + 5 + 1$

a) $+12$

b) $6 + (-10) + 3$

b) -1

c) $10 + (-12) + (-8)$

c) -10

d) $-13 + 7 + (-15)$

d) -21

e) $-40 + (-60) + (-50)$

e) -150

f) $7 + (-14) + (-10) + 12$

f) -5

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15. In golf, *par for the course* means the average number of strokes needed by an expert golfer to complete the round. People who score less than this get a score under par. For example, 2 under par is a score of -2 . Jeannie's scores in four games of mini-putt golf were -4 , -6 , 2 , and -3 . Cameron's scores were -2 , -3 , -1 , and -3 . How did Jeannie's total score for the four games compare to Cameron's?

$$\begin{aligned} \text{Jeannie} &= -4 + (-6) + (+2) + (-3) \\ &= -11 \end{aligned}$$

Jeannie 2 strokes more than Cameron.

$$\begin{aligned} \text{Cameron} &= -2 + (-3) + (-1) + (-3) \\ &= -9 \end{aligned}$$

16. The table shows the performance of two stocks on the Stock Exchange over 5 days last week. ExMac started the week at \$23, and MaxLine started at \$25. Which company ended the week with a higher price?

Stock	Mon	Tues	Wed	Thurs	Fri
ExMac	+5	-1	+2	-3	+4
MaxLine	-2	+1	-5	0	+7

ExMac HIGHER

$$\begin{aligned} &= +23 + (+5) + (-1) + (+2) + (-3) + (+4) \\ &= \$30 \end{aligned}$$

MaxLine

$$\begin{aligned} &= +25 + (-2) + (+1) + (-5) + (0) + (+7) \\ &= \$26 \end{aligned}$$

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17. The kelvin temperature scale starts with absolute zero. This is the temperature at which there is no energy left. It cannot get any colder. To get the kelvin temperature from the Celsius temperature, add 273. Write each Celsius temperature in kelvin (symbol K).

- a) 0°C
- b) -40°C
- c) -100°C
- d) -273°C

$$\begin{aligned} \text{a)} & 0 + 273 \\ & = 273^{\circ}\text{K} \\ \text{b)} & -40 + (+273) \\ & = +233^{\circ}\text{K} \\ \text{c)} & -100 + (+273) \\ & = +173^{\circ}\text{K} \\ \text{d)} & -273 + (+273) \\ & = 0^{\circ}\text{K} \end{aligned}$$

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18. Bryce's bank statement for July shows his deposits and withdrawals. When he pulled the statement out of the envelope, he tore off part of it.

- * a) Calculate Bryce's balance after each transaction. *
- b) Write an integer expression to show Bryce's deposits for July.
- c) Write an integer expression to show Bryce's withdrawals for July.
- d) What is Bryce's balance at the end of the month?
- e) In August, Bryce had a total of four transactions. His final balance was \$62. What could the four transactions have been? Can you answer this question in more than one way?

Bryce Brown
125 Main St.
Bank Balance for July 2004
Opening Balance: \$124

Date	Transaction	Amount	Balance
July 2	Withdrawal	\$28	\$124 \$96
July 5	Withdrawal	\$48	\$96 \$48
July 8	Deposit	\$32	\$48 \$80
July 21	Withdrawal	\$89	\$80 -\$9
July 23	Withdrawal	\$33	-\$9 -\$42
July 24	Deposit	\$20	-\$42 -\$22
July 29	Deposit	\$15	-\$22 -\$7
July 31	Withdrawal	\$49	-\$7 -\$56

$$b) +32 + 20 + 15 = \$67$$

$$d) -\$56$$

$$c) -28 + (-48) + (-89) + (-33) + (-49) = -\$247$$

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