Problem of the Week 1

Winners in the Roll Down the Brim contest at Tom Hinton’s have to answer skill

testing questions in order to claim the grand prizes of cars, TVs, or $5000 cash.

You and a friend decide to try some of the questions, but you keep getting

different answers.

For each question, decide which answer is correct, and explain why.

a) Is the value of 6+8\_2􀀀5 equal to 5,or is it equal to 2?

b) Is the value of 7 \_ 4 + 12 \_ 2 equal to 20, or is it equal to 34?

c) Is the value of 12 􀀀 6 + 9 \_ 3 equal to 5, or is it equal to 9?

d) Having calculated the value of 16 + 4 \_ 3 \_ 6 + 4 \_ 3 ,you got an answer of 30. But your

friend got 42. Which answer is correct?

Explain how each answer was obtained.

Answer:

1. The correct order of operations does the division ﬁrst so 6 + 8÷2−5 simpliﬁes to 6 + 4−5.

Then we do addition and subtraction in the order they appear producing an answer of 5. We can write this using brackets as follows: 6 + (8÷2)−5 = 6 + 4−5 = 5. From this point on in the solution, we will use round brackets to show the parts that will be completed next.

b) The correct order of operations gives (7×4) + (12÷2) = 28 + 6 = 34.

c) The correct order of operations gives 12−6 + (9÷3) = 12−6 + 3 = 9.

d) If the correct order of operations is used, the answer is

16 + (4×3)÷6 + (4×3) =

16 + (12÷6) + 12 =

16 + 2 + 12 = 30

The incorrect answer was done as

(16 + 4)×(3÷6) + 4×3 =

20× 1 2 + 4×3 =

(10 + 4)×3 =

14×3 = 42