Level 2: Expressions and Equations Pretest Answer Key

Question 1:

A salon sells bottles of Hair Today shampoo and conditioner individually and as a combo package. The manager of the salon writes the following expression to determine total profit from the sale of shampoo and conditioner.

$6(s + c) + 8s + 2c$

Which of the following is an equivalent expression?

a. $48s + 12c$

b. $15s + 9c$

c. $14s + 8c$

d. $14s + 3c$

Question 2:

The manager of a bakery calculates the daily profits using the expression $4(x + 2) - (x - 7)$.

Which of the following is equivalent to this expression?

a. $3x + 1$

b. $3x + 9$

c. $3x + 13$

d. $3x + 15$

Question 3:

Diane runs a plumbing business. She estimates the cost of a plumbing job using the expression:

$4(x + 3y) - 8 + \frac{3}{4}$.

Write an equivalent expression for the cost of the job without parentheses and with three terms.

$$4x + 12y - 7\frac{3}{4}$$

Continue

Question 4:

A nurse is preparing a dose of medicine for a patient. He uses the weight in kilograms, *w*, of the patient in the expression below to determine the proper dosage.

$0.4(w - 3) + 0.7w$

How much does the dosage increase if the patient's weight increases by 1 kg?

1.1

Question 5:

A worker at a factory is mixing two batches of peanut butter.

- Batch 1 contains 75 gallons and is 97% whole peanuts.
- Batch 2 contains 30 gallons and is 90% whole peanuts.

Which computation could be used to determine the percentage of whole peanuts in the mixture?

a. Add the number of gallons in the two batches and divide by (97 − 90)%.

b. Add the amounts of whole peanuts in the two batches and divide by (75 + 30).

c. Add the number of gallons in the two batches and divide by the average of the two percents.

d. Add the amounts of whole peanuts in the two batches and divide by the average of 75 and 30.

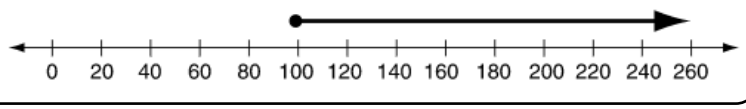
Question 6:

As a diver descends into sea water, the pressure increases by 1 atmosphere every 33 feet. This inequality can be used to determine *d*, the depth in feet of the diver at which the pressure is at least 4 atmospheres.

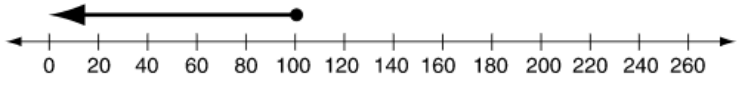
$$1 + \frac{d}{33} \geq 4$$

Which graph **best** represents the solution for *d*?

a.



b.



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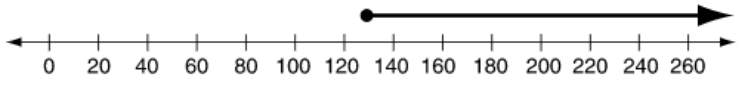
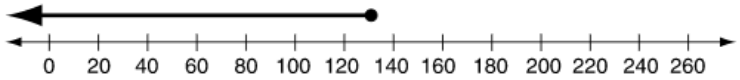


d.



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Question 7:

Two students compared their heights.

- Thomas is $62\frac{7}{8}$ inches in height.
- Molly is $65\frac{1}{4}$ inches in height.

What is the difference, in inches, in the heights of the two students? Write your answer as a mixed number in simplest form.

$2\frac{3}{8}$ inches

Question 8:

Jason has c nickels.

- He has 5 more dimes than nickels and 2 more quarters than nickels.
- Jason writes the expression $0.05c + 0.10(c + 5) + 0.25(c + 2)$ to find the total value of his coins.
- He rewrites the expression as $0.40c + 1$.

Which statement explains how Jason can use the rewritten expression to find the total value of his coins?

a. He can add \$0.40 and \$1 and multiply by the number of nickels.

b. He can multiply the number of nickels by \$0.40 and then add \$1.

c. He can add \$0.40 and \$1 and multiply by the total number of coins.

d. He can multiply the total number of coins by \$0.40 and then add \$1.

Question 9:

A florist is arranging flowers in vases.

- She starts with 150 flowers.
- She puts 12 flowers in each vase.
- There are 42 flowers left over.

Which equation can be used to find the number of vases, v, that the florist uses?

a. $12v + 42 = 150$

b. $42v + 12 = 150$

c. $12(v + 42) = 150$

d. $42(v + 12) = 150$

Continue

Question 10:

Troy is landscaping his yard.

- He spends a total of $500.
- Troy spends $160 on bricks.
- He spends the rest of the money on trees that cost $20 each.
- Troy uses the equation $500 = 20t + 160$ to find the number of trees, t, he can buy.

What is the value of t?

a. 8

b. 17

c. 25

d. 33

Question 11:

This equation can be used to find the number of hours, h, Jarrod rented a canoe when his total cost, c, was $55.

$6h + 25 = 55$.

How many hours did Jarrod rent the canoe if his total cost, c, was $73?

8 hours

Question 12:

Abby bought a shirt that was on sale for $\frac{1}{3}$ off the original price. She also had a coupon for 40% off any purchase. She spent $14.40 on the shirt.

What was the original price of the shirt?

$ $54.00

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Question 13:

At a gym, Rachel pays a monthly fee of $20 and $5 for every exercise class she takes. Rachel can spend no more than $50 each month at the gym.

Write an inequality that can be used to find the number of classes, c , Rachel can take each month.

$\$5c + \$20 \leq \$50$

Question 14:

The school football team needs to raise at least $850 to buy new practice equipment. The team received a donation of $125, and also earns $4 for each ticket sold to their games.

Which inequality can be used to find the smallest number of tickets, t, that need to be sold for the team to have enough money for the new practice equipment?

a. $125 + 4t \leq 850$

b. $125 + 4t \geq 850$

c. $4t - 125 \leq 850$

d. $4t - 125 \geq 850$

Question 15:

Louise sold 873 copies of a book she wrote for $10.99 each.

If she earns 52% profit from each book, about how much profit will she earn in all?

a. $4000

b. $5000

c. $6000

d. $7000

Stop