Tips, Commissions, and Fees

Explore ideas and representations

Name _____ **Date** _____ **Score** _____ / 8

QUICK REVIEW

A percent tip, commission, or fee is rate times the stated base; a fixed fee is added separately. A 12% fee on 25 dollars is 3 dollars. Add a separate 2 dollar fee to get 5 dollars in total fees.

Worked example

Equipment rental: the base is \$55.00, the percent fee is 10% of base, and a fixed fee is \$2.00. Find the fee total and final payment.

1. Percent amount: $55(10/100) = \frac{11}{2}$ dollars.
2. Total fees: $\frac{11}{2} + 2 = \frac{15}{2}$ dollars.
3. Base plus fees: $55 + \frac{15}{2} = \frac{125}{2}$ dollars.
Answer: Percent amount \$5.50; fees \$7.50, payment \$62.50.

Practice Problems

Show your thinking.

1. Meal tip before tax: the base is \$40.00, the percent fee is 15% of base, and a fixed fee is \$0.00. Find the fee total and final payment.

2. Ticket service fee: the base is \$80.00, the percent fee is 5% of base, and a fixed fee is \$3.00. Find the fee total and final payment. Express total payment T as a rule in base payment b.

3. A worker earns \$50.00 base pay plus 4% commission on \$500.00 in sales. Find commission and pay.

4. A worker earns \$80.00 base pay plus 3% commission on \$800.00 in sales. Find commission and pay. Find the sales needed for a commission alone of 30 dollars.

5. Group meal: the base is \$60.00, the percent fee is 20% of base, and a fixed fee is \$2.00. Find the fee total and final payment. Explain why the fixed fee is not multiplied by the tip percent.

6. Booking fee: the base is \$120.00, the percent fee is 10% of base, and a fixed fee is \$5.00. Find the fee total and final payment.

7. Online reservation: the base is \$150.00, the percent fee is 4% of base, and a fixed fee is \$3.00. Find the fee total and final payment.

8. A worker earns 45 dollars base plus 6% of 1200 dollars sales. Find commission and total pay.

Answer Key

1. Percent amount \$6.00; fees \$6.00, payment \$46.00.
2. Percent amount \$4.00; fees \$7.00, payment \$87.00. $T = 1.05b + 3$.
3. Commission \$20.00; pay \$70.00.
4. Commission \$24.00; pay \$104.00. Sales 1000 dollars.
5. Percent amount \$12.00; fees \$14.00, payment \$74.00. The stated percent applies to the base only; the fixed fee is separate.
6. Percent amount \$12.00; fees \$17.00, payment \$137.00.
7. Percent amount \$6.00; fees \$9.00, payment \$159.00.
8. Commission 72 dollars; pay 117 dollars.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

1. Percent amount: $40(15/100) = 6$ dollars.
2. Total fees: $6 + 0 = 6$ dollars.
3. Base plus fees: $40 + 6 = 46$ dollars.

Problem 2

1. Percent amount: $80(5/100) = 4$ dollars.
2. Total fees: $4 + 3 = 7$ dollars.
3. Base plus fees: $80 + 7 = 87$ dollars.
4. Base plus variable fee plus fixed fee gives $b + 0.05b + 3 = 1.05b + 3$.

Problem 3

1. Commission $= 500(4/100) = 20$ dollars.
2. Pay $= 50 + 20 = 70$ dollars.
3. Reverse check: $(70 - 50) \div (4/100) = 500$ dollars in sales.

Problem 4

1. Commission $= 800(3/100) = 24$ dollars.
2. Pay $= 80 + 24 = 104$ dollars.
3. Reverse check: $(104 - 80) \div (3/100) = 800$ dollars in sales.
4. $0.03s = 30$ gives $s = 30/0.03 = 1000$ dollars.

Problem 5

1. Percent amount: $60(20/100) = 12$ dollars.
2. Total fees: $12 + 2 = 14$ dollars.
3. Base plus fees: $60 + 14 = 74$ dollars.
4. The percent is stated on the 60 dollar base: $60(0.20) = 12$ dollars. Using the fixed fee in that base would instead give $(60 + 2)(0.20) = 12.40$ dollars, changing the stated rule.

Problem 6

1. Percent amount: $120(10/100) = 12$ dollars.
2. Total fees: $12 + 5 = 17$ dollars.
3. Base plus fees: $120 + 17 = 137$ dollars.

Problem 7

1. Percent amount: $150(4/100) = 6$ dollars.
2. Total fees: $6 + 3 = 9$ dollars.
3. Base plus fees: $150 + 9 = 159$ dollars.

Problem 8

1. Commission $1200(0.06) = 72$ dollars.
2. Base plus commission $45 + 72 = 117$ dollars.
3. Check the sales: $72/0.06 = 1200$ dollars.

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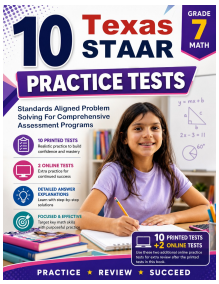

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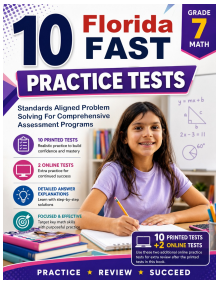

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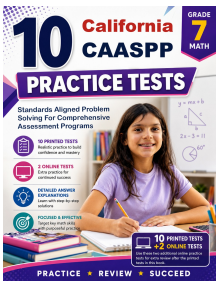

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