

Smart Math Choices

Choose a strategy, estimate, and solve exactly.

GRADE 8 • TEKS 8.1.C

8.1.C "select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems;"

NAME _____

DATE _____

PICK THE RIGHT STRATEGY

Choose mental math when numbers are friendly or patterns are easy to see. Use paper and pencil for several steps or less friendly decimals and fractions. Estimate before or after calculating to check whether your exact answer makes sense.

WORKED EXAMPLE

Find 36% of 250. Choose an efficient technique.

1. 10% of 250 is 25.
2. 30% of 250 is 75.
3. 6% of 250 is 15.
4. 36% of 250 is $75 + 15 = 90$.

Answer: 90, using mental math with percent parts.

PRACTICE 6 problems

1 Find $19.8 + 6.2$. Name a useful technique.

ANSWER _____

2 Find $7/8 - 3/8$. Name a useful technique.

ANSWER _____

3 Find $-14 + 27$. Name a useful technique.

ANSWER _____

4 Find 15% of 80. Name a useful technique.

ANSWER _____

5 Find 4.7×3.8 . Name a useful technique.

ANSWER _____

6 Find $5/6 \div 10/9$. Name a useful technique.

ANSWER _____

APPLY IT Show your work

- 1** A streaming app uses 1.75 GB for each downloaded episode. Mira downloads 6 episodes when her phone has 12 GB free. How many gigabytes of free space remain? Name a useful tool or technique.

WORK SPACE

ANSWER _____

- 2** A hoodie costs \$64. It is on sale for 15% off, and shipping costs \$4.80. What is the total cost after the discount and shipping? Use an estimate to check your answer.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

A game costs \$72. It is 25% off, then 8% sales tax is added to the discounted price. Is a final price of \$58 reasonable? Explain using an estimate, then find the exact final price.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Find $19.8 + 6.2$. Name a useful technique.	26, mental math.
2	Find $7/8 - 3/8$. Name a useful technique.	$1/2$, mental math.
3	Find $-14 + 27$. Name a useful technique.	13, mental math.
4	Find 15% of 80. Name a useful technique.	12, mental math.
5	Find 4.7×3.8 . Name a useful technique.	17.86, paper and pencil.
6	Find $5/6 \div 10/9$. Name a useful technique.	$3/4$, paper and pencil.

PART 2 • APPLY IT

- 1.5 GB remain, paper and pencil.** Multiply 1.75 by 6 to get 10.5 GB used, then subtract from 12 GB. Paper-and-pencil multiplication and subtraction are efficient.
- \$59.20. An estimate of about \$60 makes sense.** Find 15% of \$64, subtract the discount from \$64, then add \$4.80. Estimation checks that a total near \$60 is reasonable.

CHALLENGE

Yes. A 25% discount is about \$18, leaving about \$54, and tax adds about \$4, for about \$58. The exact final price is \$58.32.

Accept any efficient named strategy that matches the calculation. Accept equivalent fraction forms for $1/2$ and $3/4$, and accept reasonable estimates that support the exact answers.