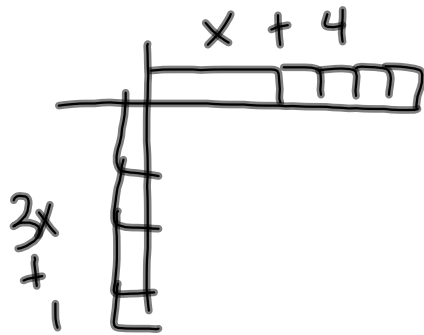


Sample Test for Jan 12/13

1. C

2. B



3. D

4. A

$25 + 40h + 16h^2$ (decomposition)

~~A) $(5 - 4h)(5 + 4h)$~~
 A red arrow points from $-4h$ to $4h$ with the label $-16h^2$ below it.

~~B) $(5 + 8h)(5 + 8h)$~~
 A red arrow points from $8h$ to $8h$ with the label $64h^2$ below it.

C) $(5 + 2h)(5 + 8h)$
 $25 + 40h + 10h + 16h^2$
 A bracket under $40h + 10h$ is labeled $50h$.

A) $(5 + 4h)(5 + 4h)$
 Red arrows show the FOIL process: $5 \cdot 5$, $5 \cdot 4h$, $4h \cdot 5$, and $4h \cdot 4h$.

$25 + 20h + 20h + 16h^2$
 $25 + 40h + 16h^2$

5. $(x + 1)(3x - 2)$ (D)
 Red arrows show the FOIL process: $x \cdot 3x$, $x \cdot -2$, $1 \cdot 3x$, and $1 \cdot -2$.

$3x^2 - 2x + 3x - 2$

$3x^2 + x - 2$

6. $6x^2 - 13x - 5$
 Decomposition

$$\begin{array}{r} \text{add } -13 \\ \text{mult } -30 \\ \hline -15 + 2 \end{array}$$

$$\begin{array}{r} 30 \\ \hline 1 \quad 30 \\ 2 \quad 15 \\ 3 \quad 10 \\ 5 \quad 6 \end{array}$$

$$\begin{aligned} & (6x^2 - 15x) + 2x - 5 \\ & 3x(2x - 5) + 1(2x - 5) \\ & (3x + 1)(2x - 5) \quad B \end{aligned}$$

7. $n^2 + 9n - 36$ (add/mult)

$$\begin{array}{r} \text{add } 9 \\ \text{mult } -36 \\ \hline -3 + 12 \end{array}$$

$$\begin{array}{r} 36 \\ \hline 1 \quad 36 \\ 2 \quad 18 \\ 3 \quad 12 \\ 4 \quad 9 \\ 6 \quad 6 \end{array}$$

$$(x - 3)(x + 12) \quad C$$

8. $12a^2 + 18a$ (GCF)

$$6a(2a + 3) \quad C$$

9. $A = lw$

$$2x^2 + 9x - 5 = (x + 5)(2x - 1) \quad (A)$$

10. $x^2 - 8x - 20$ (add/mult)

$$\begin{array}{r} \text{add } -8 \\ \text{mult } -20 \\ \hline 2 + -10 \end{array}$$

$$(x + 2)(x - 10) \quad D$$

11a) GCF
 $8m^2(3m-2m^2+4)$

b) GCF
 $7pq^3(2p^3q-5)$

12. (multiply)

$$8x^4 + 22x^3 - 128x^2 + 187 - 91$$

13. $6x^2 + x + 3$

14a) add/multiply
 $(x+7)(x-6)$

b) Decomposition
 $(2x-1)(3x+4)$

c) difference of squares
 $(x-b)(x+b)$

d) add/mult
 $(x-9)(x-3)$

e) GCF $2(x^2-4)$
 ↓ difference of squares
 $2(x+2)(x-2)$

f) GCF: $3(5x^2+11x+2)$
 Decomposition

$$3(5x+1)(x+2)$$