How Can Fishermen Save Gas?

Factor each polynomial below. Find one of the factors in **each** column of binomials. Notice the letter next to one factor and the number next to the other. Write the letter in the box at the bottom of the page that contains the matching number.

(1) $4n^2 - 49$
(2) $n^2 + 8n + 12$
(3) $n^2 - 9n + 20$
(4) $n^2 + 16n + 64$
(5) $n^2 + 2n - 15$
(6) $3n^2 - 8n + 5$

(3) $(n + 1)$
(11) $(n + 2)$
(2) $(n + 8)$
(9) $(2n + 7)$
(4) $(n + 5)$
(18) $(n - 1)$
(14) $(n - 4)$

(O) $(n - 3)$
(G) $(2n - 7)$
(P) $(n - 5)$
(S) $(3n - 5)$
(Y) $(n + 8)$
(K) $(3n - 1)$
(A) $(n + 6)$

(7) $a^2 + 4a - 21$
(8) $5a^2 + 9a - 2$
(9) $2a^2 + 11a + 15$
(10) $1 - 9a^4$
(11) $a^2 - 11a + 30$
(12) $10a^2 - 3a - 1$

(1) $(a - 5)$
(13) $(a + 7)$
(5) $(5a + 1)$
(7) $(a + 2)$
(15) $(a - 1)$
(8) $(1 - 3a^2)$
(16) $(2a + 5)$

(G) $(2a + 1)$
(B) $(a - 6)$
(P) $(a - 3)$
(O) $(a + 3)$
(I) $(5a - 1)$
(R) $(2a - 1)$
(N) $(1 + 3a^2)$

(13) $8u^2 + 19u + 6$
(14) $25u^2 - 20u + 4$
(15) $3u^2 - 11u - 14$
(16) $u^2 - 4u - 21$
(17) $6u^2 + 17u - 10$
(18) $2u^2 + 5u - 18$

(10) $(u + 3)$
(12) $(2u + 9)$
(17) $(u - 3)$
(3) $(5u - 2)$
(6) $(3u - 14)$
(15) $(u + 2)$
(17) $(3u + 10)$

(M) $(u + 1)$
(B) $(2u + 1)$
(O) $(8u + 3)$
(L) $(2u - 1)$
(C) $(u - 7)$
(R) $(u - 2)$
(F) $(5u - 2)$

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

OBJECTIVE 3–p: To factor polynomials using the methods on preceding pages (review).

Old Lawyers Never Die, They Just

14	12	5	4	1	10	4	7	9	2	13	13	4	2	14

Old Skiers Never Die, They Just

8	12	3	12	6	11	10	7	14	14

YOU MAY HAVE HEARD THAT OLD MATH TEACHERS NEVER DIE, THEY JUST REDUCE TO LOWEST TERMS. TO FIND OUT WHAT HAPPENS TO OLD LAWYERS AND SKIERS, FOLLOW THESE DIRECTIONS:

Factor completely each polynomial below. Find your answer in the appropriate answer column and notice the letter next to it. Each time the exercise number appears in the code, write this letter above it.

Answers for 1–7:

(C) $(3x + 5)(x - 2)$

(I) $5x(2x - 7)(x + 1)$

(T) $2(x + 2)(x + 9)$

(Y) $a(x + 6)(x + 2)$

(S) $x^2(x + 10)(x - 2)$

(D) $2x(3x + 7)(3x - 7)$

(M) $x^2(x + 4)(x - 5)$

(B) $2(x + 3)(x + 6)$

(A) $5x(x - 4)(x + 2)$

(F) $2x(9x - 7)(x + 7)$

(W) $(3x + 10)(x + 1)$

(K) $5x(2x - 1)(x + 7)$

(E) $a(x - 3)(x - 4)$

(1) $2x^2 + 22x + 36$

(2) $5x^3 - 10x^2 - 40x$

(3) $18x^3 - 98x$

(4) $ax^2 - 7ax + 12a$

(5) $x^4 + 8x^3 - 20x^2$

(6) $3x^2 + 13x + 10$

(7) $10x^3 - 25x^2 - 35x$

(8) $12u^2 - 28u - 24$

(9) $u^4 - 3u^2 - 4$

(10) $15u^4 + 2u^3 - u^2$

(11) $2u^2v - 18uv + 28v$

(12) $12u^3 + 36u^2 + 27u$

(13) $40u^2 + 15u - 55$

(14) $u^4 - 10u^2 + 9$

Answers for 8–14:

(H) $u^2(5u - 1)(3u + 1)$

(V) $3u(4u + 3)(u + 3)$

(L) $(u + 1)(u - 1)(u + 3)(u - 3)$

(N) $2v(u - 7)(u - 2)$

(K) $4(3u + 6)(u - 1)$

(B) $(u^2 + 9)(u + 1)(u - 2)$

(G) $4(3u + 2)(u - 3)$

(M) $u^2(15u + 1)(u - 1)$

(P) $5(8u + 11)(u - 1)$

(U) $2v(u + 14)(u + 1)$

(R) $(u^2 + 1)(u + 2)(u - 2)$

(F) $5(4u + 11)(2u + 1)$

(O) $3u(2u + 3)^2$