

# Test 1 Review

$$\textcircled{1} \quad 6y^4, 3y^3, 9y \Rightarrow 3 \cdot 2 \cdot y \cdot y \cdot y \cdot y, 3 \cdot y \cdot y \cdot y, 3 \cdot 3 \cdot y$$

$$\text{GCF} = 3 \cdot y$$

$$\textcircled{2} \quad 45p^3, 54p^2$$

$$9 \cdot 5 \cdot p \cdot p \cdot p, 9 \cdot 6 \cdot p \cdot p$$

$$\text{GCF} = 9p^2$$

$$\textcircled{3} \quad 40m^5 + 24m$$

$$= 8 \cdot 5 \cdot m \cdot m \cdot m \cdot m \cdot m + 8 \cdot 3 \cdot m$$

$$= 8m(5m^4 + 3)$$

$$\textcircled{4} \quad 5s^2t + 22s^3t^2 - 6s^4t^4$$

$$5 \cdot s \cdot s \cdot t + 22 \cdot s \cdot s \cdot s \cdot t \cdot t - 6 \cdot s \cdot s \cdot s \cdot s \cdot t \cdot t \cdot t$$

$$s^2t(5 + 22st - 6s^2t^3)$$

$$\textcircled{5} \quad 6m^2(4n-9) - (4n-9)$$

$$= 6m^2(4n-9) - 1(4n-9)$$

$$= (4n-9)(6m^2-1)$$

# Test 1 Review

$$\begin{aligned} (6) \quad & 3t(74+11) - 8(74+11) \\ &= (74+11)(3t-8) \end{aligned}$$

$$\begin{aligned} (7) \quad & 6tz - 10z + 12t - 20 \\ &= 2z(3t-5) + 4(3t-5) \\ &= (3t-5)(2z+4) \end{aligned}$$

$$\begin{aligned} (8) \quad & uv^2 - 8 - v^2 + 8u \\ & uv^2 - v^2 + 8u - 8 \\ & v^2(u-1) + 8(u-1) \\ & (u-1)(v^2+8) \end{aligned}$$

$$\begin{aligned} (9) \quad & y^2 - 8y + 7 \\ & \text{sum} = -8 \quad (-7) + (-1) = -8 \\ & \text{product} = 7 \quad (-7) \cdot (-1) = 7 \\ \text{So } & y^2 - 8y + 7 = (y-7)(y-1) \end{aligned}$$

# Test 1 Review

$$(10) \quad z^2 + 5z - 24$$

$$\text{Sum} = 5 \quad (8) + (-3) = 5$$

$$\text{Product} = -24 \quad (8)(-3) = -24$$

$$\text{So } z^2 + 5z - 24 = (x+8)(x-3)$$

$$(11) \quad x^2 + 5x + 8 \quad \text{Prime}$$

$$(12) \quad z^5 + 3z^4 - 10z^3$$

$$z^3(z^2 + 3z - 10)$$

$$z^3(z+5)(z-2)$$

$$(13) \quad 7n^2 + 91n + 294$$

$$7(n^2 + 13n + 42)$$

$$7 \cdot (n+6)(n+7)$$

$$(14) \quad m^2 - 5mn - 36n^2$$

$$\text{Sum} = -5$$

$$(-9) + (4) = -5$$

$$\text{Product} = -36$$

$$(-9)(4) = -36$$

$$\text{So } m^2 - 5mn - 36n^2 = (m-9n)(m+4n)$$

$$(15) \quad s^2 + 23st + 132t^2$$

$$\text{Sum} = 23$$

$$(11) + (12) = 23$$

$$\text{Product} = 132$$

$$(11) \cdot (12) = 132$$

$$\text{So, } s^2 + 23st + 132t^2 = (s + 11t)(s + 12t)$$

$$(16) \quad 15p^2 - 5p - 3p + 1$$

$$5 \cdot 3p \cdot p - 1 \cdot 5 \cdot p - 1 \cdot 3p + (-1)(-1)$$

$$5p(3p - 1) - 1(3p - 1)$$

$$(3p - 1)(5p - 1)$$

$$(17) \quad 4a^2 - 39a + 56$$

$$\text{Sum} = -39$$

$$(-32) + (-7) = -39$$

$$\text{Product} = 4(56) = 224$$

$$(-32) \cdot (-7) = 224$$

$$-32/4 = -8/1 \Rightarrow (a - 8)$$

$$-7/4 = -7/4 \Rightarrow (4a - 7)$$

$$\text{So } 4a^2 - 39a + 56 = (a - 8)(4a - 7)$$

Test 1  
Review

$$(18) \quad 2y^2 + 11y + 9$$

$$\text{Sum} = 11$$

$$(9) + (2) = 11$$

$$\text{Product} = (2)(9) = 18$$

$$(9) \cdot (2) = 18$$

$$9/2 = 9/2 \Rightarrow (2y + 9)$$

$$2/2 = 1/1 \Rightarrow (y + 1)$$

$$\text{So } 2y^2 + 11y + 9 = (2y + 9)(y + 1)$$

$$(19) \quad 2c^2 - 9cd - 56d^2$$

$$\text{Sum} = -9$$

$$(-16) + (7) = -9$$

$$\text{Product} = 2(-56) = -112$$

$$(-16) \cdot (7) = -112$$

$$-16/2 = -8/1 \Rightarrow (c - 8d)$$

$$7/2 = 7/2 \Rightarrow (2c + 7d)$$

$$\text{So } 2c^2 - 9cd - 56d^2 = (c - 8d)(2c + 7d)$$



# Test 1 Review

$$(24) \quad 4y(y+10) = 0$$

$$\begin{array}{l|l} 4y = 0 & y + 10 = 0 \\ \frac{4y}{4} = \frac{0}{4} & y + 10 - 10 = 0 - 10 \\ y = 0 & y = -10 \end{array}$$

$$(25) \quad (11z - 8)(5z + 1) = 0$$

$$\begin{array}{l|l} 11z - 8 = 0 & 5z + 1 = 0 \\ 11z - 8 + 8 = 0 + 8 & 5z + 1 - 1 = 0 - 1 \\ 11z = 8 & 5z = -1 \\ z = \frac{8}{11} & z = -\frac{1}{5} \end{array}$$

$$(26) \quad w^2 - 12w + 32 = 0$$

$$(w - 8)(w - 4) = 0$$

$$\begin{array}{l|l} \text{Set } w - 8 = 0 & w - 4 = 0 \\ w = 8 & w = 4 \end{array}$$

$$(27) \quad 121s^2 = 16$$

$$121s^2 - 16 = 0$$

$$(11s - 4)(11s + 4) = 0$$

$$\text{Set } \begin{array}{l} 11s - 4 = 0 \\ 11s = 4 \\ s = 4/11 \end{array} \quad \left| \quad \begin{array}{l} 11s + 4 = 0 \\ 11s = -4 \\ s = -4/11 \end{array}$$

(28)

$$\boxed{A=252} \quad w = l - 4$$

$$A = l \cdot w = l \cdot (l - 4) = 252$$

$$l^2 - 4l = 252$$

$$l^2 - 4l - 252 = 0$$

$$(l - 18)(l + 14) = 0$$

$$\text{Set } \begin{array}{l} l - 18 = 0 \\ l = 18 \end{array} \quad \left| \quad \begin{array}{l} l + 14 = 0 \\ l = -14 \end{array}$$

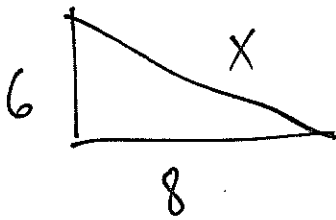
So  $l = 18$  because  $l$  cannot be negative.

$$\text{Hence } w = l - 4 = 18 - 4 = 14$$



# Test 1 Review

(29)



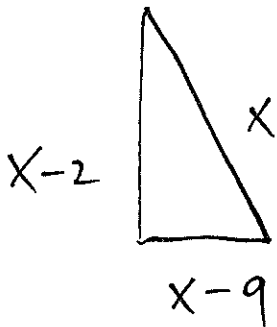
$$6^2 + 8^2 = x^2$$

$$36 + 64 = x^2$$

$$x^2 = 100$$

$$x = 10$$

(30)



$$(x-2)^2 + (x-9)^2 = x^2$$

$$x^2 - 4x + 4 + x^2 - 18x + 81 = x^2$$

$$2x^2 - 22x + 85 = x^2$$

$$2x^2 - 22x + 85 - x^2 = x^2 - x^2$$

$$x^2 - 22x + 85 = 0$$

$$(x-17)(x-5) = 0$$

$$\text{Set } x-17=0 \quad | \quad x-5=0$$

$$x=17 \quad | \quad x=5$$

#30 can't

So  $x = 17$  because if  $x = 5$   
then  $x - 9 = 5 - 9 = -4$ .

Length of a side of triangle  
cannot be negative.